DOCUMENT RESUME

ED 379 837 EC 303 710

AUTHOR	Yoches, Betty; Luera, Margarita
TITLE	Another Way To View Child Development: An Interactive Approach to the Integration of the Sensorimotor System, Communication and Temperament. Project Ta-kos.
INSTITUTION	Alta Mira Specialized Family Services, Inc. Albuquerque, NM.
SPONS AGENCY	Special Education Programs (ED/OSERS), Washington, DC. Handicapped Children's Early Education Program.
PUB DATE	90
CONTRACT	G008730529
NOTE	269p.; For related documents, see EC 303 711-715.
PUB TYPE	Guides - Classroom Use - Teaching Guides (For Teacher) (052)
EDRS PRICE	MF01/PC11 Plus Postage.
DESCRIPTORS	*Caregiver Role; *Child Development; *Communication Skills; Early Childhood Education; Motor Development; Parent Education; Parent Role; *Perceptual Motor Learning; *Personality; Professional Development; Psychomotor Skills; Sensory Training; Training; Workshops

ABSTRACT

The purpose of this training manual is to assist parents and professionals in understanding how a child's temperament, sensorimotor system, and communication system support each other in helping the child develop a solid foundation for normal growth and development. Training is based on the premise that awareness of the interaction and integration of these systems leads to more appropriate interpretation of the child's developmental needs by parents, teachers, and other caregivers, leading to a better "goodness of fit" in how the child and adult respond to each other and thereby enhancing the child's development. The manual was developed as a four workshop series, covering: (1) child development overview and sensorimotor development; (2) communication system; (3) temperament; and (4) integration of systems. The training involves discussion, mini-lectures, small and large group participation, self-awareness and problem-solving activities, and audiovisual aids. For each workshop, numerous handouts, overhead transparency originals, background information, and supplemental materials are provided. (Some chapters contain references.) (JDD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 379 837

ANOTHER WAY TO VIEW CHILD DEVELOPMENT: AN INTERACTIVE APPROACH TO THE INTEGRATION OF THE SENSORIMOTOR SYSTEM, COMMUNICATION AND TEMPERAMENT

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

PROJECT TA-KOS
Alta Mira Specialized Family Services, Inc.
P.O. Box 7040
Albuquerque, New Mexico 87194-7040

Written by
Betty Yoches and Margarita Luera

EC 303710

This document was produced under Grant No. GO08730529 from Handicapped Children's Early Education Program, Office of Special Education and Rehabilitative Services, U.S. Department of Education. The opinions expressed herein do not necessarily reflect the position of policy of the U.S. Department of Education, and no official endorsement by that Department should be inferred.

1990 Reprint permission must be obtained from Alta Mira Specialized Family Services, Inc. P.O. Box 7040, Albuquerque, New Mexico 87194-7040 (505) 842-9948

BEST COPY AVAILABLE

PROJECT TA-KÓS \tä kos\ *n.* (from a Coast Salish Indian term which suggests that any decision or course of action will affect seven generations) **1.** a family-centered curriculum for persons living or working with young children who are developmentally disabled, **2.** an inservice training model utilizing the curriculum, designed to impact present and future attitudes and actions.

Project Ta-kos is a special project of:
Alta Mira Specialized Family Services, Inc.
800 Rio Grande, NW, Suite 19, P.O. Box 7040
Albuquerque, NM 87194-7040
(505) 842-9948

ANOTHER WAY TO VIEW CHILD DEVELOPMENT:
AN INTERACTIVE APPROACH TO THE INTEGRATION OF THE SENSORIMOTOR SYSTEM, COMMUNICATION, AND TEMPERAMENT

Purpose: The purpose of this component is to assist parents and professionals in understanding how the child's temperament, and sensorimotor and communication systems support each other in helping the child develop a solid foundation for normal growth and development.

Benefit: A primary focus of training is on the roles the adult takes in supporting the child's development. Awareness of the interaction and integration of these systems leads to more appropriate interpretation of the child's developmental needs by parents, teachers and other caregivers. This understanding leads to a better "goodness of fit" of how the child and adult respond to each other, thereby enhancing the child's development.

Target Educational Personnel, Health Care Professionals, **Audiences:** Parents with Young Children

Format: Each workshop in the series is interactive. They include discussion, mini-lecture, small and large group participation, self-awareness and problem-solving activities, and audio-visual aides.

Competencies:

1) Participants will describe the functions of the sensory system.
2) Participants will describe functions of tactile system, vestibular system, and proprioceptive system.
3) Participants will explain how the sensory subsystems interact, support, and enhance each other's qualities.
4) Participants will describe how new patterns of movement are derived from innate and previously learned skills.
5) Participants will describe the progression of sensory integration.
6) Participants will explain the function of Baby Talk.
7) Participants will describe how infants regulate communicative interactions.

8) Participants will state the four primary functions of language.

9) Participants will compare infant language development to toddler language development.

10) Participants will interpret toddler grammar in order to model appropriate grammar back to the toddler.

11) Participants will compare three-year-old communication skills to four- and five-year-old communication skills.

12) Participants will describe their own temperament styles.

13) Participants will state the qualities of temperament.

14) Participants will label the adult's temperament style and the child's temperament style within an interaction.

15) Participants will examine the "goodness-of-fit" of temperament styles between the adult and child.

16) Participants will select adult behaviors that will promote "goodness-of-fit" between adult and child.

17) Participants will explain the functions of arousal and self-regulation.

18) Participants will identify calming and alerting activities.

19) Participants will describe the "Beliefs of the Extended Matrix Model."

20) Participants will label the levels of the Matrix Progression.

21) Participants can describe the functions of each level of the progression.

22) Participants will identify what the child needs at a given level of development.

23) Participants will create an environment that supports the child at that level of development.

Workshop Time: Each of the four workshops is designed to last Three hours.

Where: Local school or program site.

When: The workshop series may be given at any time, but may be most beneficial if begun early in the program year. This allows the participants the opportunity to build on the concepts throughout the year, and apply them to the children with whom they work or live.

Cost: Call Project Director
Maximum participants: 30

For more information on specific details for your program, please contact:

Linda Askew, Director Project Ta-kos
P.O. Box 7040
Albuquerque, New Mexico 87194-7040
(505) 842-9948
FAX (505) 842-9968

ACKNOWLEDGMENTS

The authors appreciate the ideas, assistance and support they received from the staff of Project Ta-kós:

Linda Askew
Mary Dudley, Ph.D.
Linda Coleman
Betty Yoches, M.S.W.
Deborah Harrington, Ph.D.
Gail Beam, Ph.D.

A special thank you to Sue Windeck, OTR and Pat Lilley, SLP for providing their expertise and creative ideas.

We are indebted to Patricia McMahon and the entire staff of Alta Mira Specialized Family Services, Inc. for their professionalism and support.

We would like to acknowledge the advice and editorial contributions made by the members of our advisory board. The following members guided us throughout our three year project period:

Polly Arango
Roger Kroth, Ed.D.
Ronald Trujillo, M.D.
Dan Haggard
Russell Snyder, M.D.
Floyd Solomon
Kenneth Martinez, M.D.
Carol Westby, Ph.D
Louis Worley

Our greatest debt is to the children, parents, teachers, therapists, administrators, and the UNM Hospital preceptors, residents, medical students at our training sites. They were kind enough to open their doors to us, to give of their time, to juggle their schedules, and to be patient with our research instruments. To the following agencies who participated in our training and research - thank you!

Economic Opportunity Board Head Start Centers:
    Centro de Amor - Albuquerque, New Mexico
    La Mariposa - Albuquerque, New Mexico
    Manderfield - Santa Fe, New Mexico
La Vida de Valencia Preschool - Los Lunas, New Mexico
New Vistas Early Childhood Program - Santa Fe, New Mexico
Roswell Public Schools - Roswell, New Mexico
Roundtree Special Preschool - Aztec, New Mexico
Tabosa Development & Training Center, Early Childhood Program - Roswell, New Mexico
University of New Mexico Medical School, Department of Pediatrics - Albuquerque, New Mexico
Zia Therapy Center - Alamogordo, New Mexico

Special thanks to Pennie Fulkerson and Magdalena Etemadi-Naghani for their patience and typing skill in preparing this document.

TABLE OF CONTENTS

Overview (Purpose, Rationale, Narrative of Content, Outlines, Competencies) 1

I. Introduction: User's Guide 5
Facilitator's Guide 7

II. Child Development Overview: What You Need 11
Child Development 12

III. Sensorimotor Development: What You Need 13
Sensorimotor Development 14
Training Materials 43

IV. Communication: What You Need 72
Communication 74
Training Materials 106

V. Temperament: What You Need 170
Temperament 171
Training Materials 183

VI. Integration of Systems: What You Need 205
Integration of Systems 206
Training Materials 230

ANOTHER WAY TO VIEW CHILD DEVELOPMENT: AN INTERACTIVE APPROACH TO THE INTEGRATION OF THE SENSORIMOTOR SYSTEM, COMMUNICATION AND TEMPERAMENT

PURPOSE: The purpose of this component is to assist parents and professionals in understanding how the child's temperament, sensory system and communication system influence the child's development from infancy through early childhood. These systems support each other in helping the child develop a solid foundation for normal growth and development. Awareness of the function and relationship of these systems will enable parents and professionals to better meet the needs of the child.

RATIONALE: The child does not develop in a vacuum. The child's growth and development is continually influenced by his physical, social and emotional environments. The sensory system is the primary way the child processes information from his physical surroundings and environment, influencing the course of his development. The child's temperament style shapes the way he responds to the environment, and influences the quality of the relationship between child and adult. The communication system is the way the child expresses himself to relay messages about what he understands and what he needs. Awareness of the interaction and integration of these systems leads to more appropriate assessment of the child's developmental needs by parents, teachers and other caregivers.

NARRATIVE OF CONTENT: This component shares information about the early development of the sensory and communication systems as well as the role temperament plays in early childhood development. Through lecture, self-awareness and problem-solving activities, participants gain knowledge about the function of these systems, and how they impact on the child's growth and development. A primary focus of the training is on the roles the adult takes in interpreting the needs of the child, and supporting the child's development.

ANOTHER WAY TO VIEW CHILD DEVELOPMENT: AN INTERACTIVE APPROACH TO THE INTEGRATION OF THE SENSORIMOTOR SYSTEM, COMMUNICATION AND TEMPERAMENT

Component Outline

I. Child Development Overview

II. Sensorimotor Development
  A. Overview of sensory system
  B. Primary sensory systems
    1. Tactile system
    2. Vestibular system
    3. Proprioceptive system
  C. Sensorimotor integration – Overview
    1. Sensory integration demonstration – Motor Planning
    2. Progression of sensory integration – Putting it all together

III. Communication System
  A. Infant Communication
  B. Toddler Communication
  C. Preschoolers' Communication

IV. Temperament
  A. Characteristics of temperament
    1. Looking at our own style
    2. Recognizing child's temperament style
  B. Quality of temperament – What theorists agree upon about temperament
  C. Relationship between parent's and child's temperament style

V. Integration of Systems
  A. Arousal and Self-regulation
  B. Extended Matrix Model
  C. Integration Activity

Competencies:

1) Participants will describe the functions of the sensory system.

2) Participants will describe functions of tactile system, vestibular system, and proprioceptive system.

3) Participants will explain how the sensory subsystems interact, support, and enhance each other's qualities.

4) Participants will describe how new patterns of movement are derived from innate and previously learned skills.

5) Participants will describe the progression of sensory integration.

6) Participants will explain the function of Baby Talk.

7) Participants will describe how infants regulate communicative interactions.

8) Participants will state the four primary functions of language.

9) Participants will compare infant language development to toddler language development.

10) Participants will interpret toddler grammar in order to model appropriate grammar back to the toddler.

11) Participants will compare three year old communication skills to four and five year old communication skills.

12) Participants will describe their own temperament style.

13) Participants will state the qualities of temperament.

14) Participants will label the adult temperament style and child temperament style within an interaction.

15) Participants will examine the "goodness-of-fit" of temperament styles between the adult and child.

16) Participants will select adult behaviors that will promote "goodness-of-fit" between adult and child.

17) Participants will explain the functions of arousal and self-regulation.

18) Participants will identify calming and alerting activities.

19) Participants will describe the "Beliefs of the Extended Matrix Model".

20) Participants will label the levels of the Matrix Progression.

21) Participants can describe the functions of each level of the progression.

22) Participants will identify what the child needs at a given level of development.

23) Participants will create an environment that supports the child at that level of development.

USER'S GUIDE

Philosophical Approach

This training emphasizes normal development in infants and preschool children. Understanding normal development in young children enables parents and professionals to set realistic expectations for the children's behaviors. They are better able to identify the cues children send out, in order to have their needs met so they can grow and develop.

Our training does not follow the stages of development approach, instead it focuses on three areas that are critical to the shaping of infant development. Our approach also emphasizes how these areas support each other and influence each other's quality of development.

Trainees should begin the series with the Sensorimotor session as this session provides the foundation for the development of the other two areas. The second session, Communication, builds on the Sensorimotor session and provides the setting to introduce the third session, Temperament.

In the last session, Integration of Systems, information from the three previous sessions will be used to help participants in operationalizing the concepts they have learned. Hands-on training is used to help participants problem-solve how they can modify the child's environment, and their own behavior, in order to enhance the child's overall development.

The text of the lecture uses both the he and she pronouns when referring to a child. In this way, we feel we have represented boys and girls equally, and avoid the awkward use of "s/he" or "him/her" during the lecture.

Format

This manual was developed as a four workshop series. For each workshop, the person who will act as the workshop facilitator will find a step-by-step guide to conduct the training. Prior to each workshop section, the facilitator will find a page entitled **"What you need"** listing materials and resources to conduct that workshop. There is also a training materials **"Table of Contents"** following this section that lists the page number where you will find these materials. In the training materials section the facilitator will find:

- document originals for making handouts
- document originals for making overheads
- background information for facilitator
- additional materials

The first workshop includes Sections II and III, Child Development Overview and Sensorimotor Development. The second workshop, Section IV, focuses on

Communication. The third workshop is Section V, Temperament, and the final workshop is Integration of Systems in Section VI.

Materials

Please read over each session carefully.

Some of the workshops require the facilitator to gather specific items ahead of time that will be used in individual demonstrations. Other workshops will use segments from videotapes. You may need to make arrangements ahead of time to get the videotape such as the video **"First Feelings"** used in the **Temperament** workshop. This may be available through the local PBS station. You may also need time to find a particular segment on the tape so that it will be cued correctly for the workshop. In addition, the **"Video Sequence of Preschoolers"** introduced in **Child Development Overview** and **"Video Sequence of Infant Showing Head Control and Feeding"** in **Sensorimotor Development** need to be provided by the facilitator/agency giving the training. The slides or pictures depicted four environments used in the **Integration of Systems** workshop are also provided by the facilitator/agency.

Time

Each session will take 3 to 4 hours depending on participant needs.

FACILITATOR NOTE:

It is very important that each facilitator have knowledge of the local community. The cultural make-up of the community will affect the training content. Our training offers recommendations for ways parents and professionals can work with children. However, you have a responsibility to caution participants to learn what child-adult interactions may not be permitted or may be considered disrespectful.

Example:

Some cultures do not allow non-family members to engage in gaze-behaviors. Gaze behaviors with young children, especially babies are seen as a form of witchcraft. "Mal de ojo."

Example:

Some cultures permit only family members to touch (position) a child.

Example:

Some cultures do not allow anyone except family to disrobe a child.

FACILITATOR GUIDE

HOW TO LEAD A GROUP

An effective facilitator leads the group in such a way that members feel they share common concerns. In an atmosphere of mutuality, group members feel accepted when they raise problems. They feel, too, a willingness to listen, empathize, and learn from other members of their group.

An effective facilitator recognizes that group members learn best from each other, particularly if the content relates to that which a member has used successfully. Most participants become willing to consider new ideas when they can release feelings about their own experiences.

At the start of the workshop, participants may hesitate to share personal feelings and experiences. Facilitators can reduce some of the group's tenseness with appropriate humor and a relaxed attitude. They can help relax the group also by describing common difficulties of child-rearing or personal experiences.

If you believe that it's more important to be an effective listener and facilitator than it is to have a precisely correct answer, you will realize that you need not be the expert in order to facilitate this workshop.

PRINCIPLES OF LEADERSHIP

Facilitators bring their personal beliefs and values to the group. They are effective group leaders who conduct workshops according to the following principles:

1. Leaders are sensitive to the potentially encouraging forces in a group and lead the group in a way which promotes cooperation and cohesiveness.

2. Leaders believe in the ability of people to grow and change. Leaders are not involved in gratifying themselves, but in encouraging the growth of group members.

3. Leaders provide experiences which allow group members to recognize their own assets. They avoid the role of expert or authority.

4. Leaders are concerned with developing an atmosphere of mutual trust and encouragement among group members.

Effective leaders will not possess all these desirable traits - no one does. But they will not be discouraged by their imperfections, either. They will proceed as well as they can, alert to ways they can improve.

SIX FACILITATOR SKILLS

The following skills of leadership can help each discussion be productive:

1. **Structuring** sets the purpose and goals of the group and the procedures of the workshop.

This workshop is not merely open discussion.

Structuring requires the leader to be continuously aware of what is happening and to determine whether it is within the purposes of the group. The leader who structures well senses when it is appropriate to permit latitude in discussions and when it is prudent to draw boundaries.

2. **Universalizing** is the process whereby a leader helps group members become aware that their questions and concerns are shared by others.

If the members are to work together and to feel concern for each other, they must learn to listen to each other and discover that their concerns are not unique, but often common experiences.

Group cohesion is promoted by a simple strategy: the leader's asking what others think about a presented problem. After hearing a question or a puzzled comment, the facilitator may ask, "Has anyone else wondered about that? Has anyone else had difficulty trying to . . .? " As responses come forth, listeners recognize they are not isolated in their feelings, questions or concerns.

3. **Linking** is the identification of common elements. It is a skill which requires a leader to listen carefully to the questions and comments expressed in the group.

As thoughts and feelings are expressed, listen for themes which are similar - but which may not have been recognized as such by other group members. Linking clarifies communication by helping members see that they have similar feelings or beliefs. Point out similarities or differences; for example, "Mary, who works for the public schools, gets very discouraged when she tries to budget time for teachers and therapists to meet with other program's staff about children moving into public school. Do you remember what Linda, from the community-based early intervention program, said about the number of hours that staff have to volunteer to meet with public school staff? Do you see any similarity between the two issues?

4. **Feedback** is the process whereby a person gets reactions from members of the group concerning what he or she has just said or done. Feedback enables a person to understand how she or he is being perceived by others.

The effective leader recognizes the value of feedback, points out its function in the group, and shows how it works by "feeding back" information to group members and clarifying what has happened. Saying to a member, "Your tone of voice sounds like you're angry and your description of Bobby's classroom makes me think your very dissatisfied - is that what you feel?"

Feedback does not demand a change; it only shares an observation. It must be done in a spirit of mutual respect and caring. Any decision to change rests with the receiver.

5. **Focusing on the positive** actions of people gives members encouragement and leads them to encourage each other. Encouragement is a necessary skill for a parent; therefore, it should be practiced in the group.

6. **Summarizing** helps members to understand ideas, procedures, and attitudes that have been expressed and to integrate what they have learned. The summary is verbal, not written, so all may benefit from the exchange.

A summary may deal with the content of the meeting, the feelings of members, or with the level of their involvement. Group members can be asked to summarize at appropriate times. The facilitator needn't wait until the end of the workshop to help clarify the outcomes of the workshop.

ANSWERING QUESTIONS

A question comes up. It's directed to the facilitator. What does the facilitator do?

First, get other group members to think about the question. To the group, say something such as, "What do you think about that? How would you have handled that?" By doing so, you will tap the wisdom of the group and "universalize" the problem posed by the question.

Redirecting a question not only stimulates, involves, and brings the group together; it also demonstrates a facilitator's faith and belief in people's ability to find their own answers.

The difference between effective and ineffective helpers lies in their basic beliefs about people. Effective helpers believe that:

> People are able, not unable. They have the capacity to solve their problems.
>
> People are friendly, not unfriendly. They expect a reciprocal relationship.
>
> People are worthy, not unworthy. They possess dignity which must be respected.
>
> People are basically internally, not externally, motivated. They are creative and motivated from within.
> People are dependable, not hindering. They are sources of satisfaction and enhancement.

A facilitator must genuinely hold these beliefs about people if the facilitator expects to encourage psychological growth. It is impossible to "sell" a democratic approach if one is authoritative and displays a lack of trust or acceptance in group meetings.

An effective facilitator must also project an impression of self-confidence. This rests upon a belief that one is adequate to meet the responsibilities and challenges of life. It comes from knowing that one is acceptable, likable, and able to bring about a positive response from people. A feeling of personal adequacy allows one to feel that sense of self-esteem which comes from being identified with others rather than alienated from them.

A feeling of personal adequacy also gives a facilitator something else - the courage to be imperfect. For this workshop, you do not have to feel that you must handle each situation perfectly. Because you believe in yourself, you-are free to believe in others and in the power of the group.

A COMMON PROBLEM FOR THE FACILITATOR

Even experienced group facilitators encounter difficulties. Many of these problems can be traced to a common denominator: the participant who resists - knowingly or unknowingly - what the rest of the group is trying to accomplish.

Communicating honestly and directly is not easy. When we feel unsure of ourselves, we may defend ourselves by "playing games."

People who play "Monopoly" believe they must be the center of attention. They become concerned whenever they are not the focus of discussion. These people have a number of purposes for monopolizing a group. Aside from enjoying the attention of other members, they develop strategies for controlling and contesting the position of the leader.

To lessen the influence of a monopolizer, you might say "I'm getting concerned that time is going fast and we need to move on to other things. If there's time later, we can come back to this." Then move on.

Adapted by Project Ta-kós from Systematic Training for Effective Parenting (STEP) *Leader's Guide* by Don Dinkmeyer and Gary D. McKay, 1976, American Guidance Service, Inc., Circle Pines MN 55014. Permission to adapt and reprint granted by publisher. All rights reserved.

CHILD DEVELOPMENT OVERVIEW

What You Need:

EQUIPMENT & MATERIALS:

Video Sequence of Preschoolers in Classroom Setting
TV Monitor
VCR
Flipchart and Markers

CHILD DEVELOPMENT OVERVIEW

MINI-LECTURE: All of us know something about child development, the general milestones a child achieves or the developmental sequence. We want to expand our approach to viewing and understanding the child's early development by examining her growth in context to the physical, social, and emotional world in which she lives.

ACTIVITY: Facilitator shows **video** of a small group of preschoolers in a classroom being taught fingerplays and songs. Facilitator will instruct the participants to watch the children for a few minutes. "Observe what the children are doing and saying during this activity." Watch for 3-4 minutes. Then ask:

- What behavior did you observe?
- What was the physical activity of the children?
- How did they communicate to each other or the teacher?
- What "personality" styles did you find in these children?"

Write responses on flipchart, so that you can refer to them throughout the presentation.

MINI-LECTURE: Here we see children interacting with the classroom environment. Through this workshop we want to explore how children grow and develop in relationship to the world in which they play and live. You have been watching several different children respond to a preschool activity, each one in an individual manner.

How do children develop in a way that allows them to be able to participate in, and enjoy this activity? What innate abilities does a child bring with her that enables him to join in the play? How do the adults and the children, as well as the physical environment, influence the quality of the child's development?

The focus of this workshop is to explore the foundations of early childhood development. Over four sessions, we will center on sensorimotor development, early language development and temperament styles, and explore how they affect the child's optimal growth and development. We will examine how the child's acquisition of skills relies on her innate abilities and the opportunities she finds in her world -- what the physical environment offers as well as the influence of parents, family, peers, and her community.

SENSORIMOTOR DEVELOPMENT WORKSHOP

What You Need:

HANDOUTS:

Sensory Feedback
Tactile System
Vestibular System
Proprioceptive System
Sensory Integration

OVERHEADS:

Sensory Feedback
Reflexes
Tactile System
Tactile Descriptors
Vestibular System
Sequence of Postural Development
Proprioceptive System
Sensory Subsystems
Programmed Sequences of Motor Development
Suck-Swallow-Breathe Sequence
Motor Planning
Sensory Integration

EQUIPMENT & MATERIALS:

Overhead Projector
Screen
Flipchart and Markers
4 Containers with tight fitting lids that have holes cut out large enough to accommodate an adult hand
4 of the Following Ingredients: corn meal, salt, baking soda, rice, oatmeal, barley, beans, etc.
Video Sequence of infant showing head control and feeding by caregiver

BACKGROUND INFORMATION FOR FACILITATOR:

Reference List
Eye-Hand Coordination

SUPPLEMENTAL MATERIALS:

Definition of Terms Associated with Sensorimotor Development

SENSORIMOTOR DEVELOPMENT

RATIONALE: The child is born with the capacity for receiving information from the environment through the sensorimotor system. The sensorimotor system enables the child to organize this input in a manner that makes it meaningful and adaptive for her. Sensorimotor development is the basis for all other development. Understanding how this system functions helps parents and professionals to support the child's overall development more appropriately.

GOAL: To help parents and professionals understand how the sensorimotor systems provide the foundation for the child's development.

OBJECTIVE 1

To describe the sensory system, the components of this system, and how it functions.

MINI-LECTURE: The child's whole existence is part of a dynamic process. She brings with her innate abilities that help her make the transition to a new environment that makes different demands on her. The child is not a passive participant in her development, waiting for caregivers to intuitively know what she needs. From birth, she is able to sense what she is feeling, and what she needs for comfort and protection. Then she must convey her needs to her caregivers, because she is dependent on the them for getting those needs met. When the child's communication is received, and understood, the caregivers are able to respond to appropriately.

EXAMPLE: An infant "senses" she is wet and cold, which the brain interprets as " I am uncomfortable". She responds by crying and kicking. The infant's actions may increase her distress, or they may bring an adult who can learn what is wrong, and change the diaper. New input, "I am no longer wet, I am warm and dry."

MINI-LECTURE: The way the child links to this new world is through the **SENSORY SYSTEM,** the means for receiving, processing and interpreting information from the environment. This system is the most primitive one in the child's development, and is the pathway for the developmental process. All further development relies on the child's ability to take in information, sort it all out, and then respond. (Refer back to the earlier example).

POINT: The sensory system is the pathway-for all development.

DISCUSSION: Facilitator ask participants "How do we get information form the environment?" Review range of answers.

MINI-LECTURE: Our bodies have special receptor cells that take in information from our physical environment. These cells are located in our skin, our muscles, in almost every part of the body. This process of receiving information is called **sensory input.** This information is relayed through our nervous system to the brain which interprets it in order to respond appropriately to the input. This is **sensory processing**. The brain then relays this feedback to the motor system, so the body can respond to the original input from the receptor sites. This entire process is **SENSORY FEEDBACK**. Sensory input plus sensory processing is sensory feedback.

OVERHEAD AND HANDOUT: Display **overhead** of "Sensory Feedback" and gives **handout** of same. Review process. Describe how sensory input comes into the brain from the nervous system. The brain translates this information, organizes it, and then initiates a motor response. This is the child's physical response to the input or stimulus. The last step in the process is the brain receiving feedback from the motor response.

EXAMPLE: "I am dry. I can calm down now."

MINI-LECTURE: A newborn already possesses all the movements and responses necessary for survival. Sensory stimulation, then, provides the key for activating the child's movement so he can participate in his world. Sensory development is closely aligned with motor development, therefore, sensory development and motor development are usually combined into the term **sensorimotor**.

DISCUSSION: Facilitator asks participants: "When you think of a newborn, what is the means for the infant to respond to sensory input?" Reveiw answers.

MINI-LECTURE: In the beginning, the infant relies on **reflexes**, which are the primary means for the infant to respond to sensory input. A reflex is a predictable movement or posture that occurs immediately and unconsciously in response to a specific stimulus or cue.

DISCUSSION: Facilitator asks participants: "What is the purpose for reflexes." Answers should reflect to protect the infant, or support the infants. "The baby depends on the reflexive mechanisms for meeting her needs (for comfort, safety and well-being.)"

POINT: Reflexes are the primary means for the infant to respond to from her world.

OVERHEAD: Facilitator shows **overhead** of "Reflexes". Describe the examples of some of the reflexes present in the newborn.

MINI-LECTURE: The reflexive behavior provides a foundation for the child to begin integrating his innate abilities with what he receives from the external world. The reflexes will either become incorporated into the child's normal pattern of behavior, such as sucking or reaching, or will be inhibited so other development may progress.

EXAMPLE: The asymmetric tonic neck reflex (ATNR) that was described is one reflex that must disappear so that the child can learn to roll.

Through the repetition of the stimulus and response sequence, the brain becomes familiar with the input. This pattern becomes a part of the baby's memory (her internal representation of the stimulus).

POINT: Sensory feedback is the mechanism for the unorganized brain of the infant to develop into the organized brain of the older child.

MINI-LECTURE: The infant's reflex behavior is one part of the internal code system that allows development to proceed in an orderly manner. There are other sequences in normal sensorimotor development of the child. Motor development progresses from head to foot and from the middle of the body to the extremities. The head and upper trunk must develop strength before the lower body and the limbs. Arm strength and hand manipulation develops before the legs and feet. All of these patterns are initiated by the sensory system.

Sensorimotor development provides the framework for all other development (language, cognitive, social/emotional)-to grow and thrive. Understanding sensorimotor development give parents and professionals the foundation for supporting the child's overall development.

For this workshop, we will explore the tactile, vestibular and proprioceptive systems, which are three of the most critical subsystems of the sensory system. We will examine how these systems provide the foundation for the child's day-to-day functioning, and give meaning to the other systems. Finally, we will examine how these systems coordinate and support each other to create the means necessary for the child to learn. These may be new terms for you. Don't be afraid of the words. We will all be taking part in activities that will help us understnad these systems.

OBJECTIVE 2

To demonstrate how we receive sensory input through the tactile system, and how that information becomes meaningful for the child.

MINI-LECTURE: The tactile system concerns the sense of touch. We have receptors all over our body, within our skin and muscles, which give us the opportunity to receive information from our environment. We are able to sense pressure, texture, temperature and pain.

DISCUSSION: As a way to encourage participants to understand the sense of touch, the facilitator asks:

"What part or parts of the body do you think are most sensitive to touch? Why?"

Facilitator guides participants in sharing varied answers. The correct reply is the part of the body that is covered by hair. "The hair offers protection to those most vulnerable areas. Men who are going bald express how sensitive their scalp is to any pressure, sunburn, etc."

"What is a common complaint from young children?"

It is getting their hair brushed or combed. "Many children dislike this because the tugged hair hurts their scalp."

ACTIVITY: Facilitator introduces participants to an activity that-demonstrates one of the functions of touch. Facilitator leads participants in "Touch and Feel Game".

Facilitator asks for volunteers. Direct the volunteers to put their hands in each one of the containers to feel each of the ingredients. Have the volunteers describe the material to the group as they feel the ingredients. Ask each of them to describe the different textural qualities of the substances. Have other members of the group guess the ingredients. Facilitator may need to help volunteers articulate the descriptors.

Facilitator Note: Prior to workshop, facilitator has assembled four paperbags or four containers with lids or which have holes cut in each top, large enough to accommodate an adult hand. Each container or bag will have one ingredient such as corn meal, salt, baking soda, rice, oatmeal, barley beans, etc.

DISCUSSION: Facilitator begins: "In this activity, you were asked to describe the different qualities of the ingredients. Why do you think the skill of discrimination between objects or substances is useful to people?"

Answers may include these areas: for protection, to avoid unpleasant substances, to understand the shape and quality of objects and "things", to find something that is comforting. You may want to list responses on board or flipchart.

MINI-LECTURE: This activity demonstrates how we receive information through touch. We immediately begin to sort the information so that it becomes meaningful to us. We say the items are "smooth", "cold," prickley among other adjectives so that we have a frame of reference for the objects. (**Note**: You can use descriptors from the previous activity.) This is an example of how sensory feedback functions.

POINT: Beside receiving input from touch, the tactile system organizes the processing of that information so it becomes useful to the individual.

MINI-LECTURE: The tactile system has two specific functions which help one determine the meaning of the input and how to respond to it. One function is for protecting the individual from danger and is called the **protective tactile system**. The other function is for organizing the information received from the touch receptors. This is the **discriminative tactile system**.

OVERHEAD AND HANDOUT: Facilitator displays **overhead** of the "Tactile System" and gives **handout** of same. Review description of the system and the two functions. **Ask participants:** "Which of these functions was illustrated by the previous activity?" The answer is the discriminative system.

ACTIVITY: Facilitator tells participants to reach into their pocket or purses and grasp one object. Ask them to keep the item in the pocket or purse, and touch it without looking at it. Then ask two or three participants to describe the 1) shape, 2) size, 3) temperature and 4) texture of the items to the audience without actually naming them. (**Note:** Display **overhead** with these four ways to describe the objects.) Record the responses for each item on the board or flipchart so the audience can review them. Ask the audience to name each item. If they can't, then have the volunteers show the items.

MINI-LECTURE: Notice how readily the volunteers were able to list different qualities of their objects. The rest of you worked at grouping these qualities together in order to make sense of the objects, and give a name to them.

How do you think an infant "learns" about the properties of "things" and people in his world? How did you learn about your world?

As soon as the infant is born, he begins learning about his world. Touching becomes the most immediate way to link with the environment. Remember, at first the process is reflexive. Anything placed across the mouth stimulates the sucking reflex. A finger or rattle placed in the hand initiates the grasp reflex. This reflex prompts the infant to touch objects. The discriminative tactile system provides the pathway for the child to learn about the properties of the persons and objects in his world. If the object is something the infant had "felt before", the brain processes this input, recognizes it, and "remembers" if the object is "similar" to what he experienced before. The brain processes the similarity or difference of the properties of the "felt" object to other objects previously touched. This process forms the basis for cognitive development, and learning.

Ask: "In our culture, what do you think is one of the most frequently used kinds of touch that adults use to show playful attention?" Correct answer is tickling. "Sometimes children are tickled and respond by crying. The adult often has no idea what caused the distress. For some people tickling is very painful."

DISCUSSION: Facilitator asks participants to give examples of other protective responses elicited from touch. Ask participants how people communicate their fear or discomfort. Examples may include pulling away, "goose bumps" and raised hair, crying out and so on.

> **POINT:** **Protective Tactile System** is reflex-based and helps the child in developing a sense of safety and security.

MINI-LECTURE: The protective tactile system regulates the discriminatory functions of touch by helping the infant feel confident enough to explore his world. These systems balance each other in order to be functional.

OVERHEAD: Display **overhead** of **"Balance Between Protective and Discriminative Systems"** as you lecture.

MINI-LECTURE: When a child receives touch that is reassuring and comforting, he feels calm and secure. He seeks out the kind of touch that gives him a sense of well-being. In this state of mind, the child's positive self-regard begins to develop and he is more able to manage new experiences. In contrast, the child will demonstrate the same kind of physical responses described earlier if he receives touch that produces anxiety and fear. His breathing may become rapid and more shallow. He may start to perspire or withdraw from the touch. He will not be able to focus, attend to others, and learn if he is feeling threatened. The systems are always trying to keep their equilibrium as they balance each other so the child is not over- or under-stimulated. (We will talk more about this in Workshop IV, Integration.)

DISCUSSION: Facilitator asks participants to describe examples of touching that bring about bonding. Then ask them to describe examples of touch that produce anxiety or distress. Answers may include: cuddling, rocking, massage, stroking or pinching, tickling, squeezing, slapping.

> POINT: **The Protective Tactile System** also promotes bonding and a sense of well-being.

MINI-LECTURE SUMMARY: The tactile system plays a critical role in all of the child's development. The discriminatory and protective functions of this system enable the infant to feel secure and confident so he can reach out, explore and learn about the world in which he lives. Let's shift our attention now to another aspect of sensory development.

OBJECTIVE 3

To demonstrate how the vestibular system regulates postural control against gravity, balance, and the movement of the body through space.

ACTIVITY: Facilitator asks participants to take part in a special activity. Tell them: "Stand up, close your eyes and keep them closed until I tell you to open them. Pay attention to your bodies, and what is happening to the body during this activity." Wait 30 seconds. Then say, "Now gently shake your heads for a few seconds and then stop." Ask them to wait another 30 seconds. Then ask participants to open their eyes.

DISCUSSION: Ask participants what they sensed their bodies were doing after they stood still. Then ask what happened after they shook their head. Participants will have answers such as "I was swaying", "I felt dizzy", or "I was off-balance". Ask how people were able to maintain their balance, i.e. shifting weight by hips or legs, adjusting head or arms.

OVERHEAD AND HANDOUT: Facilitator shows **overhead** of "Vestibular System" and gives **handout** of same. Review information with participants.

MINI-LECTURE: The body is constantly readjusting to maintain balance. Think of rides you have had standing on a bus or elevator. As the bus lurches forward, you shift your legs, and move your head, shoulder and arms to regain your balance. (You can try demonstrating this scenario to audience.) In this activity, you were able to experience the immediate readjustment of the head when it was shaken. This adjustment of the position of the body and head in space, or **postural control**, is regulated by the **vestibular system**. This system is responsible for development of **balance**. Balance is the postural control of the body against gravity. The **vestibular system** also guides muscle development which means **flexion** (contraction of muscles) and **extension** (stretching of muscles). The vestibular system coordinates the movement of the eyes, head and body within space. Finally, this system is important for maintaining muscle tone.

In the brain, the area that governs vestibular movement is located within the inner ear. Here the brain detects movement, and changes in head position. If any of you have experienced serious ear infections, you may have had trouble with your balance or have felt "dizzy". This shows the relationship of the vestibular system to the functioning of the ear.

POINT: The vestibular system regulates the position of the body and head in space, and maintains muscle control.

VIDEO: To issustrate how the infant works against gravity in order to develop head control, facilitator shows participants **video** sequence of infant on stomach beginning to lift his head. Ask participants "Describe this infant's movement of head and neck." Answers will be "erratic movement", "jerky", "wobbly". Then show **video** sequence of infant feeding while being cuddled by caregiver. This also show head control. Ask participants: "Describe position of infant's head, and head movements."

* "Where is the infant focusing?"

Answers should indicate the infant moving head toward bottle, looking at caregiver, etc.

MINI-LECTURE: In the womb, the infant is gravity free and receives support in that environment. However at birth, the infant encounters gravity and must learn to hold her head up on her own. The infant desires to see mother or the bottle and this need stimulates movement of the head and neck so the infant can learn to lift and turn her head.

OVERHEAD AND HANDOUT: Facilitator displays **overhead** on "Sequence of Postural Development". Review direction of development. Emphasize acquisition of skills needed for additional progress. For example, a child must bear weight on arms when he is prone (on stomach) before he can "combat crawl". This skill is also necessary for balance in sitting so he can catch himself when he teeters.

POINT: Movement becomes the stimulation for vestibular development.

MINI-LECTURE SUMMARY: Children naturally require more movement than adults for development, and seek many ways of accomplishing this. They seem to have boundless energy, and are in perpetual motion. Normal physical play is a natural sensory-seeking experience for children, helping them refine their coordination and become aware of their body position in space. We find infants and children delight in being tossed in the air and swung around. We see them running endlessly, or hanging upside down while watching TV or reading books. The playgrounds are filled with equipment as swings, rings, merry-go-rounds and slides that allow them to seek the type of movement they need in order to develop appropriately. The working against gravity, the practicing of movement, leads to refinement of all motor skills and is fundamental for all areas of the child's development.

OBJECTIVE 4

To demonstrate how the proprioceptive system regulates the positions of parts of the body in relation to each other.

ACTIVITY: Facilitator tells participants that there is one more sensory subsystem to explore. As a way to understand, she tells them to clasp their hands together. In this position, tell participants: "Lift your left ring finger only". After this exercise, ask participants:

"Who was able to perform the task?"

"What difficulty, if any, did you have?"

POINT:	Proprioception is related to the tactile and vestibular systems.

As we have noted, the child's movements in infancy are based on reflexes. They are "automatic". As she develops, more complex patterns of movements, such as reaching for a toy, she relies more on cognitive skills to guide her movement. First, the young child must "think" about what she is doing regarding the position of her body in space. She must remember what she has done before to produce a desired action. Then as she repeats the movements, it becomes part of her motor memory and is "second nature". This is the way we all become more coordinated.

POINT:	Processing of information about body position and movement is both conscious and unconscious.

ACTIVITY: Facilitator asks participants to close their eyes for one minute, and imagine how they are sitting. "Don't think about any one body part, but pay attention to the 'feel' of the whole body."

DISCUSSION: Ask participants:

"What did you notice when sitting?"

"How does your body adjust itself to the sitting position?"

"Where do you feel pressure?"

Answers should make participants more aware of the feel of the body in space, and the internal positioning that takes place.

MINI-LECTURE: SUMMARY: Along with the tactile and vestibular systems, the proprioceptive system is necessary for the child to learn new skills. Most children will imitate movements of the body watching others one or two times, while some will need more modeling. When the proprioceptive system is well-organized, the child will learn these skills quickly.

We have examined how these three basic sensory subsystems function so that the infant will receive, process, and respond to the sensory input accurately. Other sensory subsystems, such as the auditory and visual systems, are developing along with these primary systems. Now we look at how the entire sensorimotor system operates when these systems coordinate with each other to further the child's growth and development.

SENSORIMOTOR INTEGRATION

OBJECTIVE 5

To demonstrate sensorimotor integration.

MINI-LECTURE: The process of the systems working together, stimulating and supporting each other, is called **SENSORIMOTOR INTEGRATION**. In this way, the child's entire sensory system organizes and processes sensory input, allowing her to use the input to respond appropriately to the situation or challenge.

POINT: Sensorimotor integration is the organization of sensory input to produce an adaptive response.

The sensory subsystems combine in many ways to support and enhance each other's qualities. Facilitator shows **overhead** of "Sensory Subsystems." We have just discussed some of the ways the subsystem work together through our description of the preschool children. Another example is how the vestibular system relies on hearing and vision to help the body Maintain its orientation and balance.

ACTIVITY: Before this session, facilitator asks a volunteer to blow a horn or kazoo when given a certain signal (cough, pull ear, etc) at this point in lecture. Sound is meant to startle participants.

DISCUSSION: Facilitator asks participants for their reaction to the sound.

MINI-LECTURE: When one is trying to identify an unfamiliar sound, the head naturally moves in the direction of the noise. Eye and head movement coordinate to help the body maintain it's position in space. Actually, every degree the head changes, the eye shift the same number of degrees. Let's try another activity.

ACTIVITY: Facilitator asks participants to focus on some object in the room. Ask them to take their open hand, and gently slap it against the side of the head, between the eye and ear. The eyes should jiggle. They keep shifting in order to maintain equilibrium of the head. Ask participants:

"Describe how your eyes reacted after the slap."

Answers should describe movement and refocus of eyes.

Note to Facilitator: Motion sickness is a result of the discrepancy between what one sees and what movement the body senses. Vertigo is related to this problem also.

ACTIVITY: "Let's try one other activity to see how these systems support each other".

Point to object that appears to be one thing, but after examination is another. For example a "marble block" made out of styrofoam and marble contact paper, a "stone" that is really a candle, a "brick" mad out of soft material, etc. Handle it as if it were heavy, delicate, etc., like the real object.

Facilitator asks participants:

"What systems do you use to tell the properties of this _______.

Answers should include vision, touch, proprioception.

Then ask participants:

"What does vision tell you about this object? Summarize (color size, shape).

"What do you think this _________ will feel like? (hard, soft, cold, rough...)

"What more will touch teach you about this ___?"

Then have a volunteer actually handle the object and tell what s/he now knows about the object. This activity will show how all the systems help us learn about our environment.

MINI-LECTURE: When the tactile system works with visual system, we are able to understand the properties of objects. This is the discriminative aspect of touching and stimulates the development of **visual-form perception**. An infant sees a ball, but will not "know" it's dimension or texture (i.e., round and smooth) until he touches it. Furthermore, when touching and vision combine with hearing, they provide the foundation for language development. As the baby explores his world, he touches and plays with the objects and people in it. The adults and older children give names to these experiences. "Here is the ball . . . Give Daddy a hug." Touching reinforces the child's understanding of language.

Note to Facilitator: This will be referred to again in the **Communication** workshop.

When all these systems work together as they should, they provide the foundation for the development of the child's perception of himself, his **body schema** or self image. Through touching, postural control, and the orientation of the child's body in space, he is able to form boundaries between his body and the rest of his world. He develops an **internal map** of how it "feels" to be coordinated and "centered". The child "senses" the body in a specific posture or position, and when it's "out of position" so he can make adjustments. We also discussed how reassuring touch promotes a sense of confidence in the child. The development of body schema supports the child's emotional growth, helping him to feel secure. When children feel confident about how their bodies perform, and they feel safe moving through physical space, their self-esteem is enhanced. They are better able to attend to take on challenges and to learn.

EXAMPLE: Think about the movement of a two year old in contrast to the five year old. (**Note**: You may want to ask audience to describe these movements before giving them a description.) The toddler is unsure of where to put her limbs, (the arms out to side), how to negotiate walking around corners, how to mold her body to the chair. The five year old jumps off the furniture without falling, knows how to adjust his body to the slide, senses when his shirt is on backward. He looks more coordinated and confident.

Note to Facilitator: Emotional well-being in relation to the child's development will be expanded on in the **Temperament** and **Integration** workshops.

POINT: The sensory systems interact to enhance and support the child's development.

OVERHEAD AND HANDOUT

Display **overhead "Programmed Sequences"** as you lecture.

The sensory systems are coordinated because there are sequences of motor development that are already programmed into certain areas of the brain. When sensory input is received by the brain these sequences are activated. They produce a motor response that is appropriate to the situation (**adaptive response**). The cycle continues as this response further stimulates the brain to organize itself.

Basic motor skills such as rolling over, crawling, reaching out and grasping, sitting up or walking involve patterns of movement that are innate. As soon as the infant has the physical strength, a "drive" initiates the "program" to move, such as crawling. A baby does not learn to crawl because it sees another child crawling, but because he is ready to move. In all societies and cultures, babies follow the same pattern of development because their brains are programmed in the same way. Blind children follow these sequences even though they have not seen them demonstrated, as do deaf children when they have not been told what to do.

POINT: Certain patterns of motor development are innate, and are activated by the sensory system.

These sequences enable the child to coordinate the sensory input with the appropriate motor response. This response then stimulates development of other motor skills. The **SUCK-SWALLOW-BREATHE** sequence is an example of how skills derived from sensory input build from reflexes, to a programmed sequence of behaviors, and then to more complex physical and motor development We will follow this progression.

OVERHEAD

Display **overhead "Suck-Swallow-Breathe Sequence"** as you lecture.

In utero, the fetus is already in active exploration of his environment through his mouth. We know the mouth region is one of the most sensitive areas for receiving and processing touch on the body. At birth, one of the first reflexes stimulated is the **sucking reflex**. Whenever the newborn is touched along the mouth, he reacts by sucking. Sucking is the way for the child to feed for survival, but is also critical for him to be able to calm himself.

The suckling reflex initiates the **SUCK-SWALLOW-BREATHE** sequence. With this in place, the newborn is able to feed appropriately, because this programmed sequence of motor behaviors ensures that the liquid will be swallowed before air is taken into the lungs.

DEMONSTRATION: Facilitator asks participants to try to simulate this-sequence by sipping on a liquid (if available) to show how the body automatically responds. "You will find that you naturally swallow before breathing. When the sequence has been disrupted, choking usually occurs, because we have been startled or distracted when feeding or drinking."

MINI-LECTURE: The **SUCK-SWALLOW-BREATHE** sequence not only affects the child's ability to feed, but also his development of breath control for survival and acquisition of language, and the continued development of trunk control for mobility and movement of extremities. This sequence provides a foundation of oral-motor coordination. Oral-motor coordination is an example of how all the subsystems work together in stimulating and integrating the child's development. Through stimulation and responding, motor development is refined so the child can develop competency in motor skills and, later, more complex patterns of motor behavior.

Note to Facilitator: The **SUCK-SWALLOW-BREATHE** sequence is also referred to in the **Communication** workshop.

OVERHEAD: Facilitator demonstrates how the sequence affects the development of oral-motor coordination through sensorimotor development. Refer to **overhead**, "Suck-Swallow-Breath Sequence", when reviewing the pattern of development in next section.

MINI-LECTURE: From repetition of this sequence, the infant is able to develop adequate breath control.

DEMONSTRATION: (Use doll and point out round stomach.)

She initially breathes from her belly. This movement alerts the tactile and vestibular systems which further activate her abdominal muscles. The breathing and other reflexive movements encourage the baby to practice "curling up", or **flexion**, which strengthens these muscles.

DEMONSTRATION: (Have participants place hand on stomach first and then diaphragm as they breathe in/out to demonstrate change.)

As flexion movements continue, the diaphragm is activated and works to pull more air into her lungs. Eventually, around nine months old, the baby's trunk and abdomen change shape. As a result of the stimulation of muscles, the stomach pulls in and the rib cage changes to accommodate the expanding lungs. Now the lungs, not the belly, inflate as the baby breathes. Good breath control allows for more endurance, which is necessary for vocalizations and for the stamina for motor development. It is so exciting to see how everything works together!

The sucking activates the sensory receptors located in the lips, tongue, cheeks, and jaw. Sensory input again stimulates muscle development in the mouth region. The mouth play, combined with adequate breath control, provides the child with the capacity for producing sounds. At the same time, she is getting auditory feedback from lip-smacking, cooing, and babbling that encourage her to imitate those sounds.

Finally, the baby uses her mouth and tongue to explore the objects that occupy her world. This exploration supports cognitive, language, motor and visual development. Once she has developed head and trunk stability, she has the ability to reach out for objects. (Refer to Postural Control discussion) The repetition of reaching out and grasping activates the hands and fingers. They will become more coordinated with more experience. When the baby brings the items to her mouth, she uses the discriminative tactile system to learn how they taste, smell and feel. This movement also puts the items into her visual field, refining the development of her visual skills.

Through the **SUCK-SWALLOW-BREATHE** sequence, many new skills are activated or refined. This exemplifies the dynamic nature of the child's development. All the systems integrate and support each other, skills build upon skills. From simple responses to sensory input, the child develops complicated patterns of behavior that enable her to progress and learn new skills.

We want to look at one other sequence in sensorimotor integration that is critical for the child to process information and learn.

OBJECTIVE 6

To demonstrate the integration of the sensory system through motor-planning.

DISCUSSION: Facilitator asks:

"How did you ride a tricycle?"

"How did you know what to do? What helped you get ready?"

Then ask:

"How did you know how to skip?"

Guide participants in discussion.

OVERHEAD: Display **overhead** "Motor Planning" during lecture.

MINI-LECTURE: **MOTOR PLANNING** is the ability to perform new or unfamiliar tasks. At first, the baby learns motor skills through the programmed motor sequences just like what we have discussed. As the brain matures, the child builds on these. She has the physical and cognitive capabilities to enhance her motor development through play. She imitates others. Example: slapping floor,

VIDEO: Show a video tape sequence of children that demonstrates motor planning.

MINI-LECTURE: As she matures, she begins to combine previously learned skills into new patterns. The child "knows" how to grasp "things" and she "knows" how to bang "things". So grasping a spoon to bang on a pot is an extension of skills she already has to invent new patterns of behavior.

EXAMPLE: Examples of early motor sequences found in play: following adult demonstration of banging on pot with spoon, "pat-a-cake", "so big", peek-a-boo".

> **POINT:** New patterns of movement are created from other skills.

For the child, the world is a wonderful place of "possibilities" for experimentation and exploration. She is combining old movements with new, or using established skills in new ways.

EXAMPLE: A four year old who is taken to a new playground will immediately see lots of ways to interact with the equipment before her. She will go up and down the slide in a variety of ways: sitting up frontwards, lying down backwards, climbing up the slide's surface or sliding down the poles of the ladder. Facilitator shows **overhead** called "Motor Planning."

While the child is experimenting, she is receiving feedback form all the sensory systems. Besides just refining the motor skills into more precise movements, the feedback also allows us to develop memory patterns for those movements. After we have stored up a "bank" of those **MEMORY PATTERNS**, we become very efficient at motor skills. When we want to learn a new motor skills, we reach into the "bank" for memory patterns of similar movements, so that the new skill is easier to learn.

EXAMPLE: When you drive a car that is different from your own, you don't need to relearn how to drive. You take notice of the differences, and get a "feel" for the new car, making any adjustments so you can drive it. However, you rely on the similar experience of driving to help you accommodate to the new situation.

POINT: We store a "bank" of memory patterns of similar movements to help us learn new motor skills.

DISCUSSION: Facilitator asks participants to share 2-3 examples of how previously learned skills translate to new situations. Examples may include learning how to use new tools, building projects, shifting to different tasks in the work setting. This activity allows participants to draw on their own experiences to have an understanding of motor planning.

MINI-LECTURE: The more experiences we have, the more memory patterns we add to our "bank account" of motor skills. The more time a child spends interacting with his world, and the more variety of interactions mean that the child is developing a large bank account to draw upon for the rest of his life. The child who is more passive, or who always plays with the same objects in the same ways, will be at a great disadvantage for not having a large repertoire of behaviors. Opportunities for play in a variety of ways is very important to the development of the young child.

ACTIVITY: Facilitator tells participants that they are going to try another activity. "Let's try an activity that uses motor planning and language."

Facilitator asks participants to watch her perform a sequence of gestures.

Facilitator holds one hand open flat and palm up. The other hand is in a **FIST**. She lightly pounds the **FIST** on the palm of the first hand. Then she changes the **FIST** into an open hand, and brings the **EDGE** of the hand down on the palm of the first hand. Finally, she moves the open hand to a **PALM** down position and slaps the first hand. Repeat this sequence again. **FIST**. **EDGE**. **PALM**.

"I want you to each try to imitate this sequence two times."

Demonstrate sequence one more time. Have them go through sequence twice.

Then demonstrate sequence again and say out loud, **"FIST"**, **"EDGE"**, **"PALM"**, as you do each action. Then direct participants to try sequence two more times but tell them you are going to now add directions. Say **FIST, EDGE, PALM** as you do each action with participants.

DISCUSSION: Ask participants to give feedback on their success of following sequence the first time without verbal cues. Then ask them how they managed with the verbal cues. Some may answer that they were saying the words silently to themselves. Most will share that speaking the words helped them follow the sequence.

"This activity shows us how language helps us organize our motor sequences."

POINT: Motor-planning is closely related to language development.

MINI-LECTURE: For the child, adequate oral-motor coordination provides the basis for speech production. At the same time, maturation of the child's brain gives him the ability of language which helps him to coordinate his movements. So the developing systems continue to interact with and support each other.

Because of his early experiences with movement and sensory input, the child develops memory patterns of his behaviors that enable him to learn. Motor planning helps the child move beyond reflexive behaviors towards refining his motor skills, combining "old" skills in new ways and acquiring more complex movement patterns.

OBJECTIVE 7

To illustrate the progression of sensory integration.

MINI-LECTURE: In our discussion, we have explored the primary sensory subsystems and how they stimulate and support each other providing a foundation for the child's development. Sensorimotor development builds on fundamental motor patterns through motor learning which helps the child acquire and practice skills. Motor learning enables the child to achieve more complex motor skills like cutting with scissors or catching a ball.

Now we have a chance to see how the stages of sensory motor development fit together. Let's follow a child engaged in feeding, from sensory input and reflexes to more complex patterns of behavior. We will use a diagram of Sensory Integration adapted from the work of Jean Ayres. This diagram illustrates the progression of sensory development and the integration on sensorimotor skills as the child grows and develops.

Note to Facilitator: The work of Jean Ayres on Sensory Integration is referenced in Sensorimotor Training Material section, page 54.

OVERHEAD AND HANDOUT: Facilitator shows **overhead** "Sensory Integration" and gives **handout** of same. Use overhead with overlays, illustrating each section with appropriate overlay as you talk.

DEMONSTRATION: This diagram helps to summarize what we have discussed. Let's begin on the left side with the first section, the "Sensory Systems". Imagine a parent feeding a child with a bottle. (**Note:** Facilitator can model a parent feeding an infant, cradling the child in her arms and pretending to feed the bottle to the baby.)

DISCUSSION: Facilitator divides group into smaller groups. Directs participants to look at this section.

- "As you look over the sensory subsystems, what subsystems are being used by the infant feeding on the bottle?"
- "Describe what behaviors or movements are involved. Some are listed here. (i.e. sucking, bonding, etc.)

Have groups brainstorm answers to share with large groups. Answers should include all of the subsystems and most of the resulting descriptions listed. The following is an example of expected responses. If participants are unable to do this, then facilitator can prompt them or give examples.

The lips are touched, resulting in the sucking reflex (tactile). Sucking allows the child to eat. The parent's arms are cradling the infant, giving support to the infant (gravitation security, tactile and vestibular) and tactile comforting. (Sucking also comforts). The positioning of the baby allows him to gaze at parent which both relies and stimulated head/neck control (posture, vision, proprioceptive and vestibular). Parent may talk with infant, which stimulates head to turn and child to focus (hearing, vision, vestibular, proprioceptive).

MINI-LECTURE: These movements are the basis for sensory integration and lead to the development of sensorimotor skills. As we move to the next section, we begin to see how these subsystems work together to form more complex behaviors and sequences of behaviors. During this time the child is practicing and refining skills. As the sensorimotor system develops, the brain is maturing and his cognitive skills are progressing as well.

Now imagine the young child is able to hold the bottle himself and drink from it. He is able to sit by himself. (Facilitator may want to model this.)

DISCUSSION: Facilitator asks participants to look over the second section and relate what child needs in order to drink from the bottle by himself.

- "As you think about this child holding the bottle, which of these descriptions fit with the skills the child will use."
- "Are there other skills/behaviors child will use?"

Have small groups brainstorm and share with large group. Answers could include head and trunk control, and balance (postural control) so child is stable. Bilateral coordination to reach for and hold bottle. Combining reaching, holding and sucking (motor planning). Attending to task. Vocalizing when hungry. Knowing how to direct bottle to mouth (proprioceptive). Self-comforting.

MINI-LECTURE: As we look at this progression, we see the child becoming more sophisticated and taking more control of this world. The patterns of movement are more complicated. Through play and movement, he is able to practice skills, and experiment with combining movements. These are registering in his memory.

There is a growing awareness of his accomplishments which enable him it learn more skills. His cognitive development is developing along with the sensorimotor development. All this is bringing him confidence and sense of self-satisfaction. Which brings to the third section, where the sensorimotor skills lead to perceptual-motor skills, and the development of more concrete concepts and a sense of self. Language becomes more important, as a way for him to organize himself, to gain control over his world and direct his behavior and movement.

Let's look more closely at the third section.

DISCUSSION: Facilitator guides all participants in the discussion.

- "If our child is now in a high chair, feeding himself (maybe dropping food over the side, chattering, asking for "more"), what skills may he be using now?"

Facilitator may need to guide participants as this information has not been directly discussed in the lecture. However participants may have experiences with children that relate to this example. The objective is for participants to notice that skillbuilding and skill refinement continue. His balance and posture are more sure. He can pick up food and throw food (fine motor, eye-hand coordination). He can use language to get his needs met and have mastery over his world. When needs are met, he feels secure (adequacy).

MINI-LECTURE: The early sensorimotor experiences help the child to feel coordinated and sure of himself (body schema). He is making sense of his environment and feeling confident so he can experiment, take risks, learn more about his world and his ability to handle it. This diagram illustrates the relationship among the emotional, cognitive, communication and sensorimotor systems. This is the beginning development of self-esteem, self-awareness and body schema.

DISCUSSION: Facilitator asks participants:

"What would happen to the child, if at any point the parents, teachers, caregivers didn't respond to the baby's needs or allow him to explore and experiment with movement and using the sensory subsystems?"

Answers should relate to the child not feeling adequate or confident, fearful of taking risks, not being able to practice skills and develop appropriately.

MINI-LECTURE: As we get to the final section, we can appreciate all the learning, experimenting, skill building the child experiences that prepare him for the higher functions. (Facilitator points to overlay.) This is why we emphasize sensorimotor development and why its important to recognize its critical place in the child's development. We've been looking at this in a pristine way without barriers or interference with development (why normal development).

We have learned how these basic skills integrate to develop patterns of movement, as in oral-motor coordination, eye-hand coordination, and visual perception. Sensory development now becomes sensorimotor development. This diagram illustrates the relationship among the emotional, cognitive, communication, and sensorimotor systems. In subsequent workshops, we will see how these systems rely on the foundation of sensorimotor development. The child's perception of the boundaries of his body relies on accurate interpretation of touch, posture and gravitational security. This leads to the development of visual-form perception and body coordination as well as the child's sense of his psychological self. When the child's body schema is congruent he has the confidence and high self-esteem tackling the challenges of higher cognitive skills such as abstract thinking and reasoning.

EXAMPLE: The child who says, "I am bigger than you." to a friend is showing a sense of his body size in reference to others. The child who sits on Daddy's shoulders and shouts, "Now, I am way bigger than Daddy!" understands the relationship has changed between him and his father.

MINI-LECTURE: At the beginning of this workshop, you watched a small group of young children in a classroom environment. You were asked how they were able to sit, interact with each other, participate in the activity and learn. From what we have discussed about the sensory system, what do you now know about how these children behave and learn?

VIDEO: Facilitator shows the same video of preschoolers that was presented at beginning of workshop. ASk participants to look again and note the children's behavior. Then direct their attention to the **overhead** "Sensory Subsystems".

DISCUSSION: Facilitator asks participants to think about the children's ability to sit and move about the room, and to attend to the activity. Direct them to review the aspects they have learned today. Facilitator asks:

* "Which of these systems guide the childrens' movements?"

* "Which of these enable the children to attend to the activity?"

Answers should demonstrate participants' awareness of how these systems work together. For example, the child can sit because of adequate head and trunk control which leads to gravitational stability (vestibular system). She also feels her buttocks touching against the floor (tactile system). Feeling the weight of the body in relation to the floor stimulates the proprioceptive system to shift body parts in order to balance. She may put her hands and arms down on the floor, shift her trunk and shoulders, or clasp her hands in order to hold a sitting pose. The head and trunk control (vestibular system) also allow the child to focus the head and body in the direction of the activity. The child may position her body in a way that is comfortable, which helps her to attend.

Facilitator asks:

"What do you notice now that you didn't before?"

"Can you describe other progressions of development that began with one or more of the senses. For instance, what combination of sensory subsystems would bring about emotional stability, or attention span?"

Guide participants in discussion. Prompt them to think of the skills required for these behaviors. Answers for emotional stability would include touching, proprioceptive and vestibular development in producing tactile comfort, bonding and gravitational security. Attention span relies on postural control, coordination of head and eyes, and accurate feedback from touch, vision and hearing.

MINI-LECTURE SUMMARY:

While the child brings into this world the capacity for developing and learning, we can see that he cannot accomplish these if he is not able to explore and experience in many ways. The parents, family, teachers, peers, and others all provide the opportunities for the child to gain experience so that he can learn and develop. They react to his needs for comfort by touch through dressing, bundling, rocking, and hugging. They observe the child in movement, and respond accurately to his needs for motion, gravitational security or stimulation. They chase him, tickle him, hold on to him when he starts to walk and know when to let go so he can do it himself. They take him to the park where he has the freedom to run, roll and jump -- where he can slide, swing, and spin -- and where he can experience the heat of the blacktop, the cool tickle of the grass and the scratchiness of the sand. Finally, these caregivers and friends help him define and label these experiences, through gestures and words, which provide the foundation for future social, emotional, cognitive, and communication development.

From sensorimotor development, we will next explore the early development of communication.

TRAINING MATERIALS

Table of Contents:

HANDOUTS:

Sensory Feedback
Tactile System
Vestibular System
Proprioceptive System
Sensory Integration

OVERHEADS:

Sensory Feedback
Reflexes
Tactile System
Balance Between the Protective and Discrimative Systems
Vestibular System
Sequence of Postural Development
Proprioceptive System
Sensory Subsystems
Programmed Sequences of Motor Development
Suck-Swallow-Breath
Motor Planning
Sensory Integration

BACKGROUND INFORMATION FOR FACILITATOR:

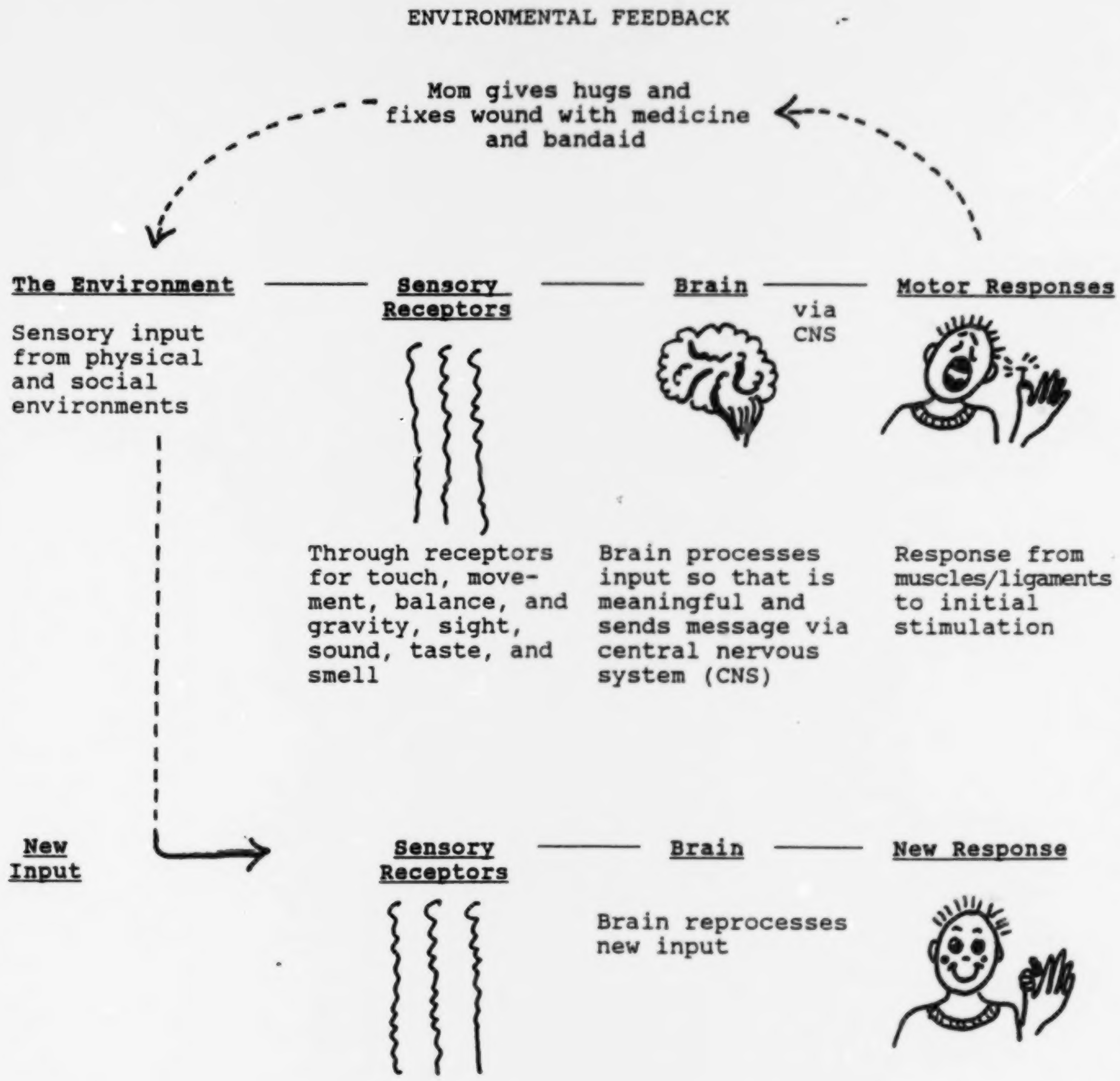
Reference List
Eye-Hand Coordination

SUPPLEMENTAL MATERIALS:

Definition of Terms Associated with Sensorimotor Development

HANDOUTS

SENSORY FEEDBACK



ENVIRONMENTAL FEEDBACK

Mom gives hugs and fixes wound with medicine and bandaid

The Environment — **Sensory Receptors** — **Brain** — **Motor Responses**

Sensory input from physical and social environments

Through receptors for touch, movement, balance, and gravity, sight, sound, taste, and smell

Brain processes input so that is meaningful and sends message via central nervous system (CNS)

via CNS

Response from muscles/ligaments to initial stimulation

New Input → **Sensory Receptors** — **Brain** — **New Response**

Brain reprocesses new input

Project Ta-kós 1990.

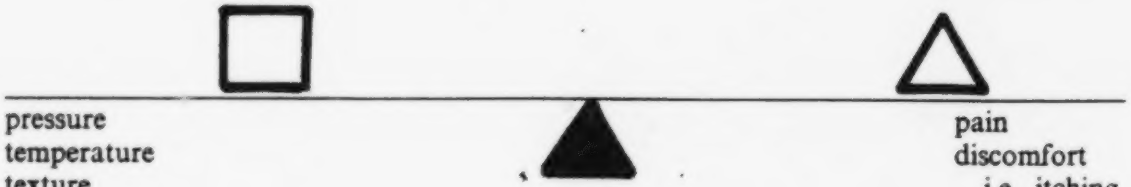
TACTILE SYSTEM

- touching as primary means for receiving information from environment
- receptors throughout body receive information from touch
- tactile system organizes sensory input so it is meaningful to us
- tactile system has two functions which determine appropriate response

TWO FUNCTIONS

Discriminative Tactile System

Protective Tactile System



pressure
temperature
texture
form
wet/dry
air currents

pain
discomfort
i.e. itching
temperature

- these systems balance each other so child feels centered and secure enough to take risks in order to explore environment

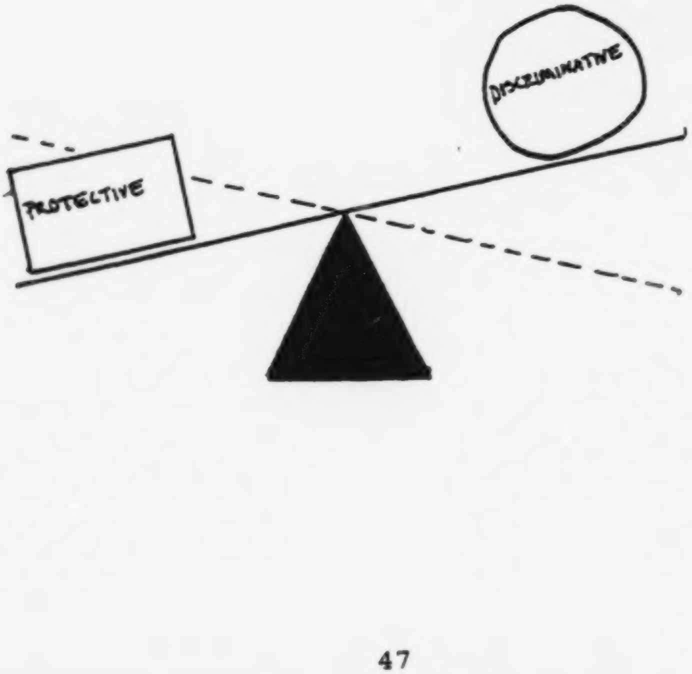
TOUCH OPENS THE DOOR TO ALL OTHER SENSES

Project Ta-kós, 1990.

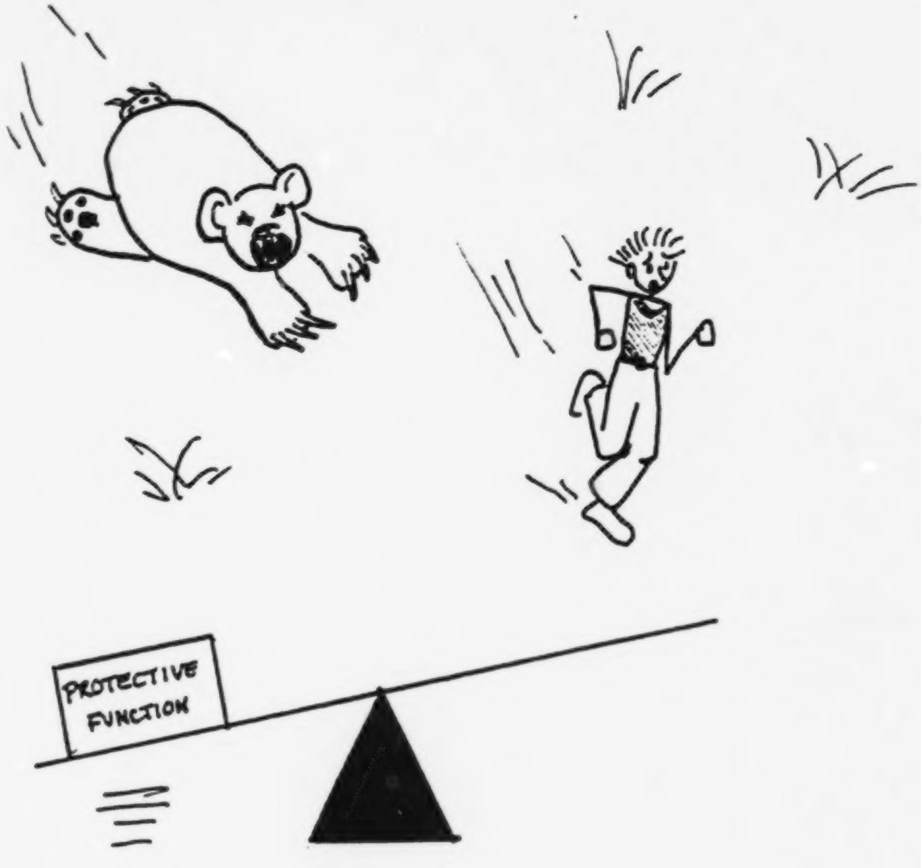
BALANCE BETWEEN THE PROTECTIVE AND DISCRIMINATIVE SYSTEMS

The protective and discriminative functions of the sensorimotor system regulates sensory input.

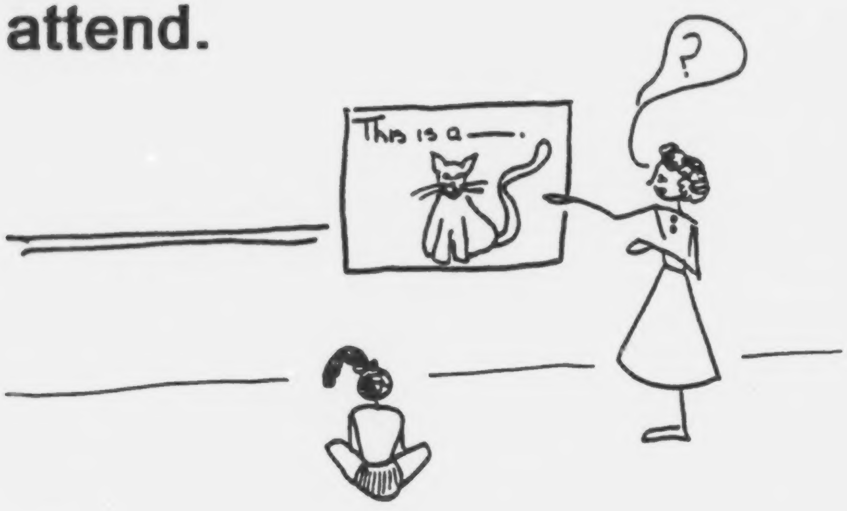
These functions balance each other.

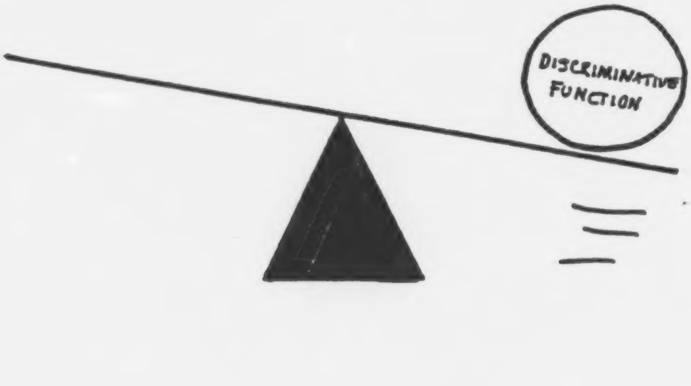

DISCRIMINATIVE
PROTECTIVE

The protective function regulates any threats or danger that may affect the child's well-being.


PROTECTIVE FUNCTION

The discriminative function regulates the amounts and kinds of sensory input so the child is able to focus and attend.




DISCRIMINATIVE FUNCTION

VESTIBULAR SYSTEM

- regulates position of body and head in space
- maintains muscle control and muscle tone
- maintains stability of head and trunk
- detects and responds to gravity
- responsible to balance
- detects sensory input from motion and gravity

ALL MOTOR DEVELOPMENT RELIES ON HEAD AND TRUNK STABILITY

Project Ta-kós 1990.

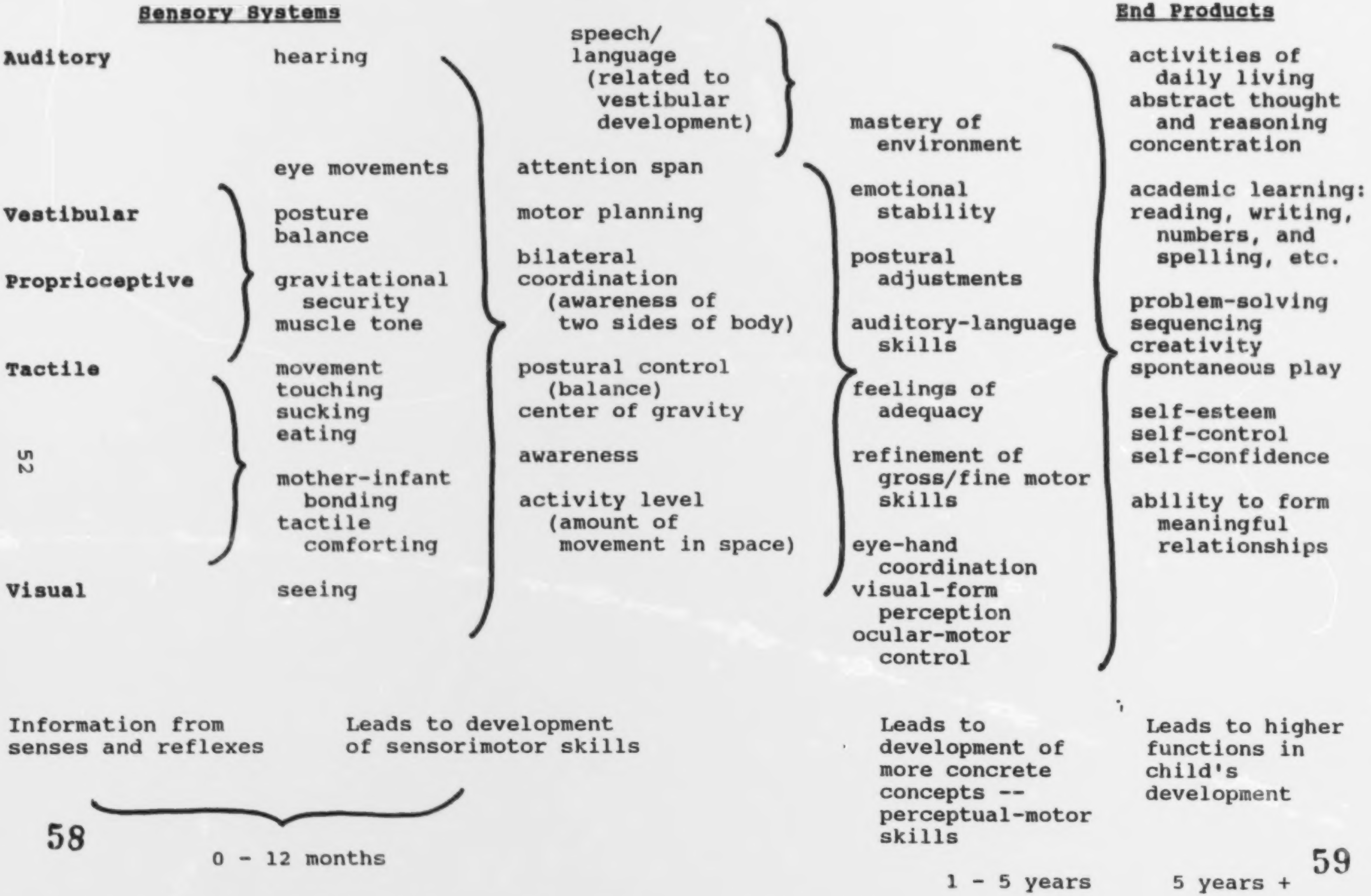
PROPRIOCEPTIVE SYSTEM

- process sensory **input** from **muscles, tendons,** and **ligaments**
- regulates **muscle tone**
- detects **position** of **one body part to another**
- regulates **skeletal movement** along with vestibular system

PROPRIOCEPTION WORKS IN CONJUNCTION WITH THE VESTIBULAR AND TACTILE SYSTEMS

Project Ta-kós 1990.

SENSORY INTEGRATION



Sensory Systems

Auditory

Vestibular

Proprioceptive

Tactile

Visual

hearing

eye movements

posture
balance

gravitational security
muscle tone

movement
touching
sucking
eating

mother-infant bonding
tactile comforting

seeing

speech/language (related to vestibular development)

attention span

motor planning

bilateral coordination (awareness of two sides of body)

postural control (balance)
center of gravity

awareness

activity level (amount of movement in space)

mastery of environment

emotional stability

postural adjustments

auditory-language skills

feelings of adequacy

refinement of gross/fine motor skills

eye-hand coordination
visual-form perception
ocular-motor control

End Products

activities of daily living
abstract thought and reasoning
concentration

academic learning: reading, writing, numbers, and spelling, etc.

problem-solving
sequencing
creativity
spontaneous play

self-esteem
self-control
self-confidence

ability to form meaningful relationships

Information from senses and reflexes

Leads to development of sensorimotor skills

0 - 12 months

Leads to development of more concrete concepts -- perceptual-motor skills

1 - 5 years

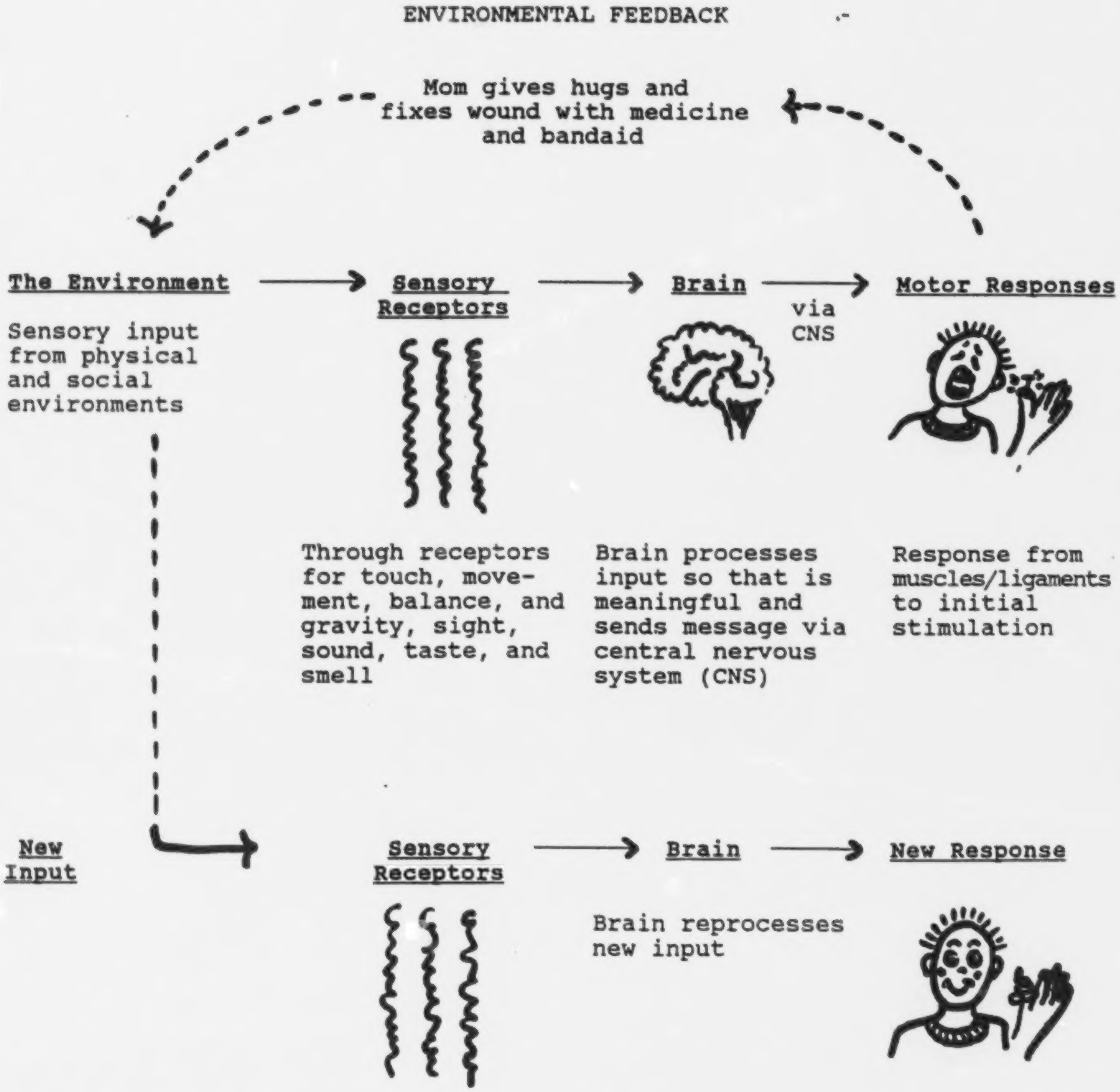
Leads to higher functions in child's development

5 years +

Material from Sensory Integration and the Child copyright c 1979 by Western Psychological Services. Adapted by Project Ta-kős and reprinted by permission of the publisher, Western Psychological Services, 12031 Wilshire Boulevard, Los Angeles, California 90025.

OVERHEADS

SENSORY FEEDBACK


ENVIRONMENTAL FEEDBACK
The Environment
Sensory Receptors
Brain
via CNS
Motor Responses
New Input
Sensory Receptors
Brain
New Response

Mom gives hugs and fixes wound with medicine and bandaid

Sensory input from physical and social environments

Through receptors for touch, movement, balance, and gravity, sight, sound, taste, and smell

Brain processes input so that is meaningful and sends message via central nervous system (CNS)

Response from muscles/ligaments to initial stimulation

Brain reprocesses new input

Project Ta-kós 1990.

REFLEXES

Reflex for **comfort** and **safety**:

- * **moro**: when infant is startled infant's head falls back, arms move up and back, then come across chest
  - for **protection** of front side
  - for **comfort** as arms hug body

Reflex for **well-being**:

- * **rooting**: when skin near mouth is stroked
  - infant's head turns toward stimulated side
  - infant tries to suck (**sucking reflex**)
  - ensures infant's **survival** for feeding
  - allows infant to find source for sucking which brings **comfort**

Combination reflex:

- * **ATNR**: asymmetric tonic neck reflex
  - when infant's head is turned to one side, arm on that side extends, other arm flexes (retracts)
  - also called "fencing posture"
  - prevents baby from rolling -- **protection**
  - facilitates eye-hand gazing and reaching for objects while on back -- **well-being**

Project Ta-kós 1990.

TACTILE SYSTEM

- touching as **primary means** for **receiving information** from environment
- **receptors** throughout body **receive information** from touch
- tactile system **organizes sensory input** so it is meaningful to us
- tactile system has **two functions** which determine appropriate response

TOUCH OPENS THE DOOR TO ALL OTHER SENSES

Project Ta-kós, 1990.

TACTILE DESCRIPTORS

SHAPE

SIZE

TEMPERATURE

TEXTURE

VESTIBULAR SYSTEM

* regulates **position** of **body and head** in space

* maintains **muscle control** and **muscle tone**

* maintains **stability** of head and trunk

* detects and responds to **gravity**

* responsible to **balance**

* detects sensory **input** from **motion** and **gravity**

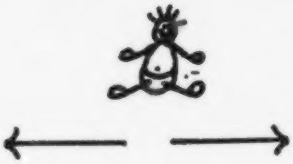
ALL MOTOR DEVELOPMENT RELIES ON HEAD AND TRUNK STABILITY

Project Ta-kós 1990.

SEQUENCE OF POSTURAL DEVELOPMENT

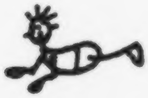
HEAD
↓
FEET

MIDDLE --EXTREMITIES

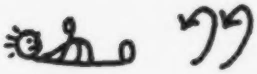


Head and trunk develop before lower body
Trunk must be stable before arms and legs develop

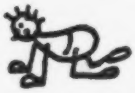
HEAD CONTROL --
raises head –
raises chest on arms



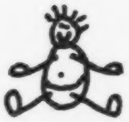
ROLLING



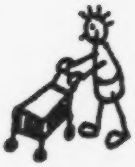
CRAWLING AND
CREEPING



SITTING



STANDING –
WALKING



Project Ta-kós 1990.

PROPRIOCEPTIVE SYSTEM

- process sensory input from **muscles**, **tendons**, and **ligaments**
- regulates **muscle tone**
- detects **position** of **one body part to another**
- regulates **skeletal movement** along with vestibular system

PROPRIOCEPTION WORKS IN CONJUNCTION WITH THE VESTIBULAR AND TACTILE SYSTEMS

Project Ta-kós 1990.

SENSORY SUBSYSTEMS

TACTILE

VESTIBULAR

PROPRIOCEPTIVE

AUDITORY

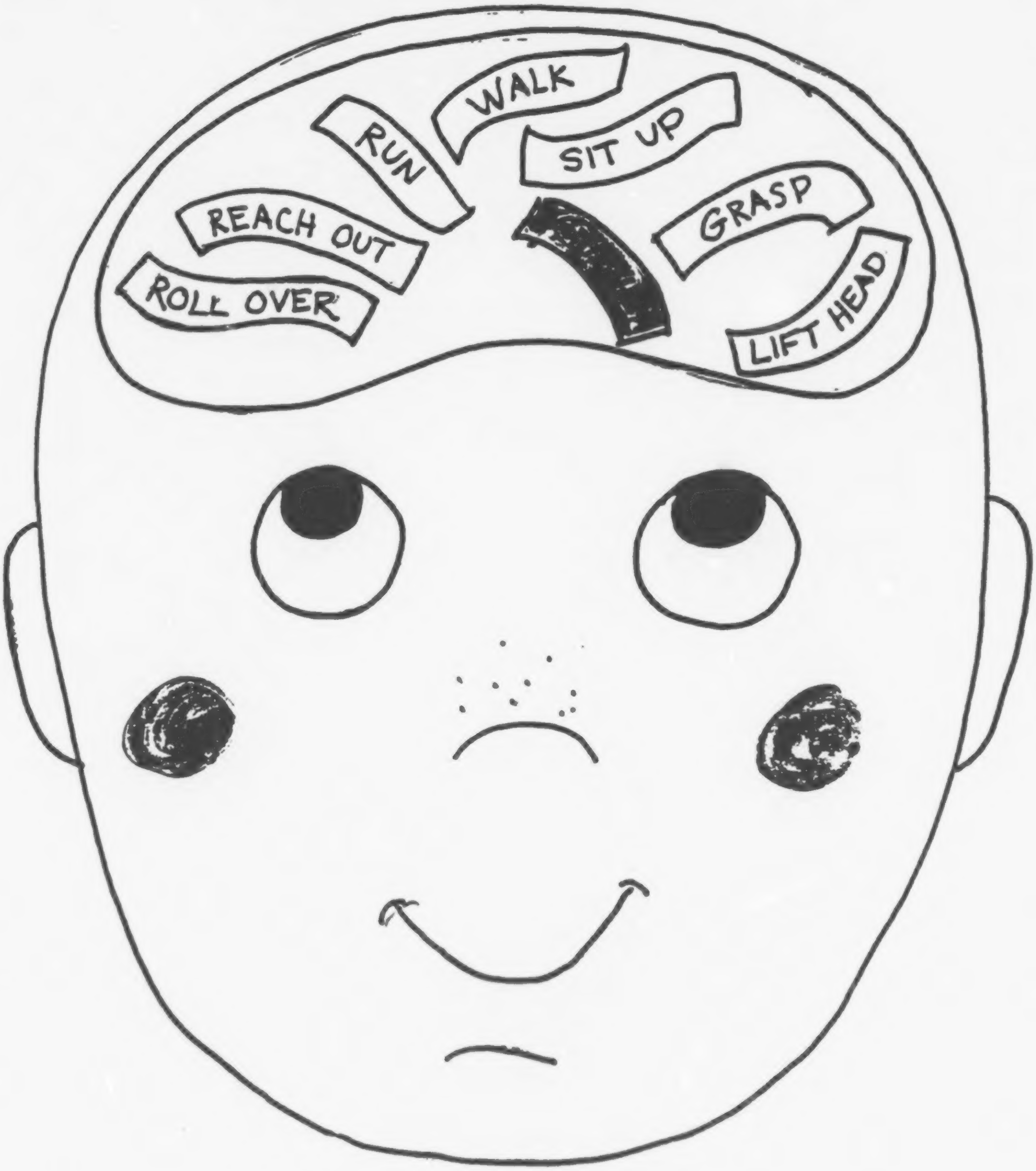
VISUAL

also:

GUSTATORY

OLFACTORY

PROGRAMMED SEQUENCES OF MOTOR DEVELOPMENT


WALK
SIT UP
RUN
GRASP
REACH OUT
LIFT HEAD
ROLL OVER

SUCK-SWALLOW-BREATHE SEQUENCE

BREATH CONTROL

Breathe from belly

Flexion or
"curling up"

Chest expands and
stomach pulls in

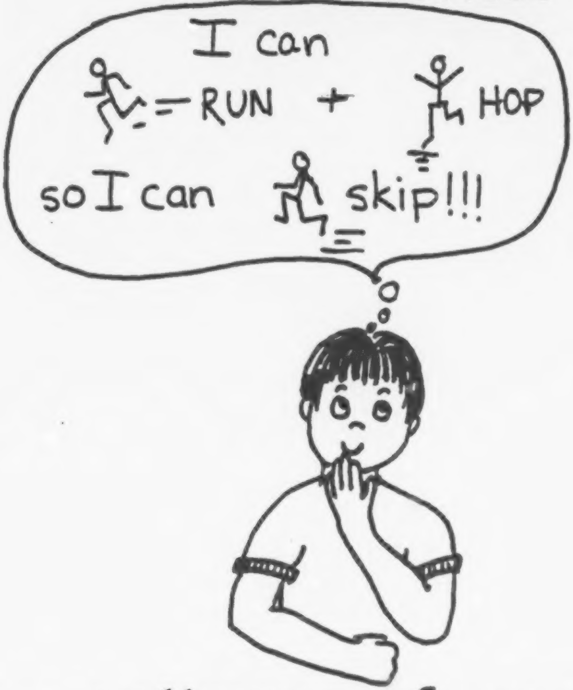
SUCKING

EXPLORATION

Project Ta-kós 1990.

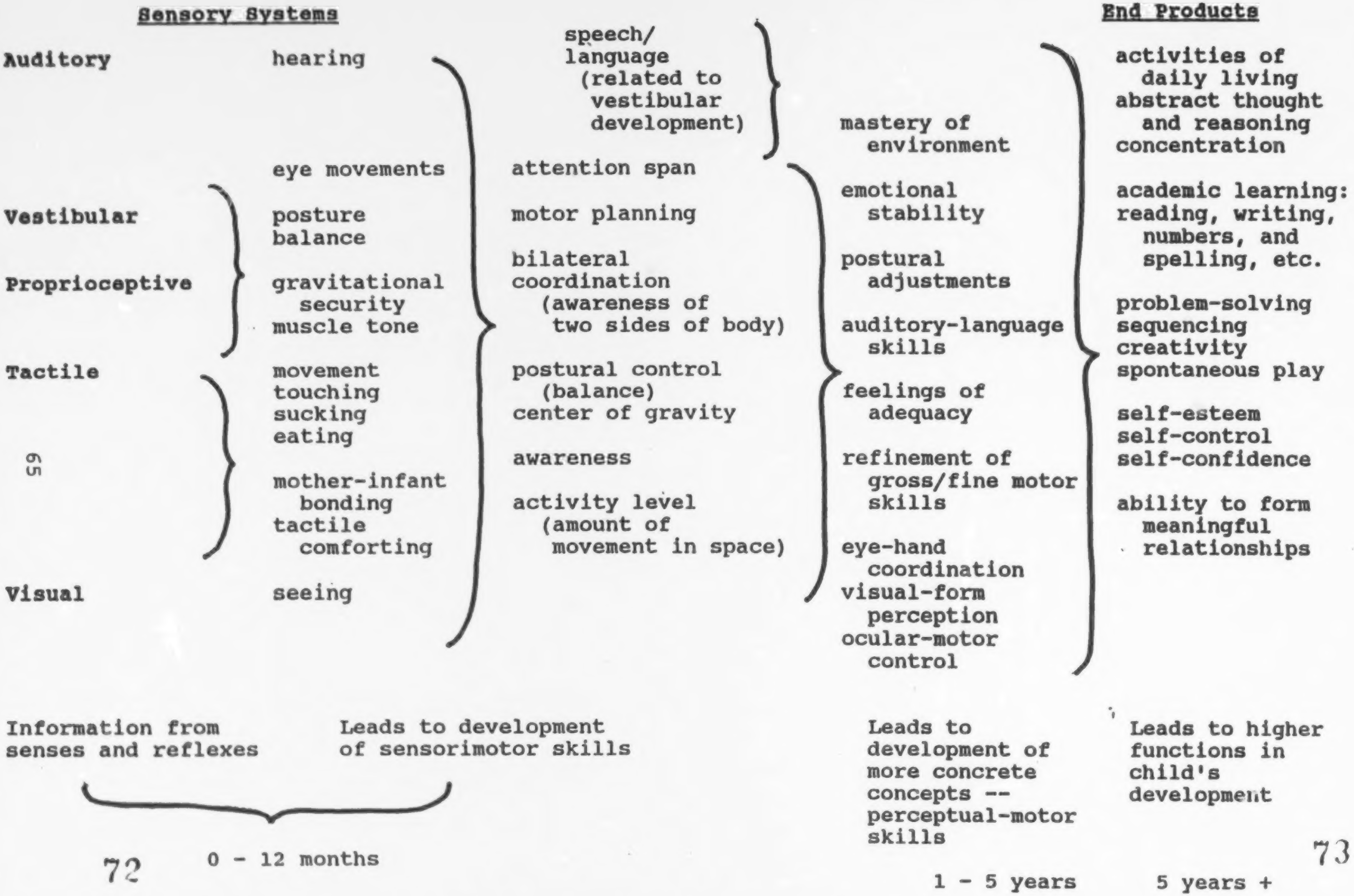
MOTOR PLANNING

The ability to plan and perform new or unfamiliar movements.


I can
= RUN +
HOP
so I can
skip!!!

New patterns of movement are created from other learned skills that we retrieve from our memory - MEMORY PATTERNS.

SENSORY INTEGRATION



Sensory Systems

Auditory	hearing
	eye movements
Vestibular	posture balance
Proprioceptive	gravitational security muscle tone
Tactile	movement touching sucking eating mother-infant bonding tactile comforting
Visual	seeing

Information from senses and reflexes

speech/language (related to vestibular development)

attention span

motor planning

bilateral coordination (awareness of two sides of body)

postural control (balance)
center of gravity

awareness

activity level (amount of movement in space)

Leads to development of sensorimotor skills

0 - 12 months

mastery of environment

emotional stability

postural adjustments

auditory-language skills

feelings of adequacy

refinement of gross/fine motor skills

eye-hand coordination
visual-form perception
ocular-motor control

Leads to development of more concrete concepts -- perceptual-motor skills

1 - 5 years

End Products

activities of daily living
abstract thought and reasoning
concentration

academic learning: reading, writing, numbers, and spelling, etc.

problem-solving
sequencing
creativity
spontaneous play

self-esteem
self-control
self-confidence

ability to form meaningful relationships

Leads to higher functions in child's development

5 years +

Material from Sensory Integration and the Child copyright c 1979 by Western Psychological Services. Adapted by Project Ta-kós and reprinted by permission of the publisher, Western Psychological Services, 12031 Wilshire Boulevard, Los Angeles, California 90025.

BACKGROUND INFORMATION FOR FACILITATOR

REFERENCES FOR SENSORIMOTOR DEVELOPMENT

Ayres, A.J. (1973). Sensory integration and learning disorders. Western Psychological Services, Los Angeles.

Ayres, A.J. (1983). Sensory integration and the child. Western Psychological Services, Los Angeles.

Leach, P. (1983). Your baby and child from birth to age five. Alfred A. Knopf, New York.

Short-DeGraff, M.A. (1988). Human development for occupational and physical therapists. Williams and Wilkins, Baltimore.

EYE-HAND COORDINATION

MINI-LECTURE: Eye-movements are coordinated by muscles that receive sensory information through the vestibular system. Development of head and neck control is critical to visual development.

1) In early infancy, when the infant's head moves, his eye gaze moves in the same direction. Sight is poor at birth. Eye muscles aren't strong, and eyes may wander or be cross-eyed.

2) As head and neck stability improve (flexion against gravity), eye muscles also become more coordinated. The baby's eyes can follow objects without moving his head, and watch toys in his hand.

3) By six months of age, the child starts to develop "eye-hand" coordination and uses his eyes to visually direct what his hands are doing. Soon the child moves toys, and drops them just to see them fall.

4) During the preschool years, the child will be able to track a moving toy, focus on near and far objects, and converge on objects that are moving towards his face.

POINT: Eye-movement is coordinated with the vestibular system.

Ocular-motor coordination affects the child's development of LATERALITY, which is an awareness of the two sides of the body.

1) EYEDNESS is the development of a dominant eye. It is the eye we use to sight with when looking through a telescope or camera lens. It develops during the preschool years before handedness, but the two may not match the same side. A child can be right-handed, and left-eyed.

SUPPLEMENTAL MATERIALS

2) HANDEDNESS relates to the development of body schema, which occurs through the tactile, vestibular, and proprioceptive systems. The child will develop a preference, or "dominance" for the left or right side.

MINI-LECTURE SUMMARY:

Laterality is a critical state in development. It is one of the strongest indicators of the brain becoming organized. It also is the basis for fine-motor tasks that depend on the coordination of both hands, and fine-motor planning skills used for reading and writing.

POINT: Ocular-motor coordination affects the development of LATERALITY.

DEFINITION OF TERMS ASSOCIATED WITH SENSORIMOTOR DEVELOPMENT

ENVIRONMENT: all the conditions and influences affecting development

SENSORY INPUT: stimulation received by the body and carried toward the brain. Types of sensory stimulation are:

- **auditory** - hearing
- **gustatory** - taste
- **olfactory** - smell
- **proprioception**- sensations from muscles, joints, tendons and ligaments; giving input to the brain as to body movement
- **tactile** - touch to the skin
- **vestibular** - sensory system responding to head position in relation to body and movement
- **visual**- sight

MOTOR: response of the body to sensory input involving body movement or posture

SENSORY INTEGRATION: ability to take in, sort out and use information from the environment

SENSORIMOTOR INTEGRATION: organization of sensory input and the resulting motor response

NERVOUS SYSTEM: network of nerve cells throughout the body.

BODY SCHEME: refers to the inner roadmap of yourself; awareness of potential movement for each body part.

MOTOR PLANNING: is the ability to plan and execute skilled or non-habitual motor acts.

REFLEX: an automatic involuntary response to a stimulus which is specific and predictable, and is usually purposeful and adaptive.

LATERALITY: refers to the establishment of hand or eye preference and the specialization of the left hemisphere of the brain for auditory language and the right hemisphere for visual form and space perception, also called dominance.

VISUAL-SPATIAL PERCEPTION (visual-form perception): awareness of form and space and the relationship of forms to each other in the environment.

Project Ta-kós 1990

COMMUNICATION WORKSHOP

What You Need:

HANDOUTS:

Infant Communication
Self Regulation and Reinitiation Behaviors
Non-Verbal Behaviors That Signal Readiness to Communicate
The Communication Dance
What We Know About Infant Communication
Helping Techniques
Infants' Language Development
Helping Baby To Learn Language
Toddlers' Communication
Toddlers' Grammar
Two-Year-Old Communication Skills
The Preschool Child's World
How To Help The Preschool Child With Language
Children's Words
Three-Year-Old Communication Skills
Four and Five-Year-Old Communication Skills

OVERHEADS:

Baby Talk
To Teach
Function of Early Language Input
Infant Control
Self-Regulation Gaze Behaviors
Infant Reinitiates Engagement
Primary Functions of Language
Levels of Complexity
Easiest Consonants to Produce
Most Difficult Consonants to Produce
Nasal Sounds
Plosive Sounds
Born With...
When You Speak, He Will
Elaborations
By Eight Months
Descriptive Language
The Toddler's World
Language for Its Uniquely Human Purpose

COMMUNICATION WORKSHOP

What You Need: *(Continued)*

EQUIPMENT & MATERIALS:

Video of PBS Tape, "First Feelings" from NOVA Series, Except on "Communication Dance" with Dr. Tronick
Overhead Projector
Screen
Tape Recorder and Tape of Voice
VCR
TV Monitor

BACKGROUND INFORMATION FOR FACILITATOR:

"Children's Play: Reflections of Social Competence"
Reference List

SUPPLEMENTAL MATERIALS:

Definitions of Terms Associated With Speech/Language

COMMUNICATION

RATIONALE: Communication is a process of sending and receiving messages. It is during infancy and early childhood that most communication skills are learned. The purpose of this session is to help parents and professionals enhance the child's ability to acquire and use language. This segment will also help parents and professionals understand how communication affects the child's cognitive, social, physical, and emotional growth.

GOAL: To help parents and professionals understand how infants and young children use the communication system to share ideas, experiences, information, needs and feelings.

SPECIAL NOTE TO FACILITATOR: An important part of communication concerns child's play. Due to the large amount of information that is currently available, this module on communication does not address the relationship between play and language. It would take another module to be able to address the topics appropriately. For the facilitator's benefit, we have included Dr. Carol E. Westby's, "Children's Play: Reflections of Social Competence," in the Background Information at the end of this module. It will provide the facilitator with an excellent introduction and bibliography for further reading.

OBJECTIVE 1

To help parents and professionals become aware of how infants communicate.

MINI-LECTURE: Parents have instincts that promote an infant's growth. Specialist believe this biological preprogramming, also called "priming," is present at the first moment parents turn to communicate with their infant. An example is how parents automatically use "Baby Talk" with exaggerated expressions animating their faces. As friends, relatives, or caregivers, we marvel at the intensity of the emotional exchange. We are quick to pick-up those behaviors that the infant seems to respond to the most. We also are quick to pick up the "Baby

Talk," the speaking tones, and expressions that seems to most catch the infant's attention.

How babies learn to communicate is still a mystery that is slowly being unraveled. Researchers are still trying to understand the function of "Baby Talk." In 1964, C.A. Ferguson published a paper that caused great-controversy in the field and opened a new door on "Baby Talk." Ferguson in his paper also proposed new ideas concerning the function of "Baby Talk".

DISCUSSION: Facilitator asks:

"What do you think Baby Talk is?"

Answers may range from examples of "goo-goo, ga-ga" to "The baby's way of communicating with his care-givers." After discussion, resume mini-lecture.

OVERHEAD: Display **overhead "Baby Talk,"** and distribute **handout, "Infant Communication."** Inform participants that the **handout, "Infant Communication,"** reflects the content of this session on infants.

MINI-LECTURE: In this study across six very different cultures, Ferguson found four common elements of Baby Talk.

Baby Talk is:

1. Relatively Stable
2. Conventionalized
3. Culturally transmitted
4. Often initiated by adults

DISCUSSION: Facilitator asks participants to think of an infant they have known and with whom you have had several opportunities for interaction. Ask "What function(s) did Baby Talk serve for you and the infant?"

Answers can vary from "showing affection" to "teaching the baby to talk."

even higher. It can climb so high that it has been described as: screeching, irritating, annoying, or as hurting the ears. Even though males have deeper voices, they too, when excited, will use a higher voice pitch.

Intonation patterns are the melodies that our voices make when we express ourselves. When we make a statement, demand, exclamation, or question we place emphasis on a different place in the sentence, and our tempo changes.

Facilitator Note: Participants may have a difficult time understanding these four different communication examples above. You may need to have examples ready for them or a tape recording of someone demonstrating the four patterns of different intonations listed above.

DISCUSSION:

Facilitator asks participants:

1. Where is the emphasis placed when you ask a baby a question? Does your voice go up at the beginning, middle, or end of the sentence? (End)
2. Where is the emphasis when you make an exclamation? (The whole sentence is said rapidly and in a louder voice)
3. Where is the emphasis placed when you make a demand? (The command word is said stronger than the rest of the sentence)

Ask participants to recall an infant with whom they have interacted. Tell them you are going to have them re-enact their communication with the infant. Ask for the following in order:

1. Give me an example of the voice pitch and intonation pattern you used to get the infants' attention.
2. Give me an example of the voice pitch and intonation pattern you used to show the infant a toy or object.
3. Give me an example of the voice pitch and intonation pattern you used to play with the infant.
4. Give me an example of the voice pitch and intonation pattern you used to gently scold the infant.

5. Which of these combinations did you use the most to "converse" with the infant?

MINI-LECTURE: Infants are sensitive to the range of frequencies they normally hear. In another study, children used high pitch when attending to babies, baby dolls, or when they role-played that they were babies. The children mimicked the pitch they heard adults use with babies.

It was also found that the infants' Baby Talk changed as a result of stimulation by the sounds of different voice pitches. The babies imitated the different voice pitches in a turn-taking manner with the caregiver. Researchers believe these special speech and intonation patterns may be cues to the child as to when the conversation is directed to him. This may give him the ability to tune out, or never tune into, the other conversations around him.

POINT: Voice pitch and intonation patterns which characterize Baby Talk may cue the infant as to when he is included in the conversation.

These activities are very important because once the caregiver captures the infant's attention, the infant will become quiet, will turn to face the caregiver, and will establish eye-contact.

Facilitator Note: Please be reminded that in some cultures, an outsider trying to initiate eye-contact or gaze-behaviors with an infant may be suspected of witchcraft. You need to know if this belief is held in your community.

Another priming behavior, establishing eye-contact, is thought to be very important in forming the bond between the infant and the caregiver. Parents will gaze long and intently into baby's eyes. This is one reason why babies need a period of time to form those bonds with a caregiver, especially if more than one caregiver is involved. Researchers studied what they called "gaze-coupling" between mothers and their three month old infants. "Gaze-coupling" is the term the researchers used to describe the act of mother and infant establishing and maintaining eye-contact. The researchers discovered this action resembled conversational turn-taking in adults:

- the initiation of a conversation
- the turn-taking in a conversation
- the maintenance of a conversation
- the ending of a conversation
- the re-initiation of a conversation

Others have labeled this sequence a "communication dance." Later we will see a video tape that will demonstrate these elements of communication.

POINT: Eye contact is a precursor to forming the bond between the infant and the parent or caregiver.

The interaction involving gaze behaviors between mother (or caregivers) and the infant normally occurs during the three to six month period. This is a time span in which the infant cannot walk, and has immature gross motor and eye-hand coordination. The visual-motor system however, is almost mature, and allows the infant to become an interactive partner. It is during this time period that the infant takes control. She can initiate the eye contact in social activities and she can also end the eye contact in social activities. Gazing, then, becomes a potent form of social communication.

OVERHEAD: Display and discuss, **"Infant Control" overhead.**

MINI-LECTURE: The infant expects interactions to be two-sided. This preprogrammed expectation of reciprocity optimizes the infant's growth by helping the infant to focus attention on the most important element of his environment, people.

POINT: Gazing is a potent form of social communication with infants.

By controlling the direction of his gaze, the infant can self-regulate the level and amount of social stimulation he receives.

DISCUSSION: Ask, "What happens when you interrupt a baby's behavioral or vocal outburst during your play with the baby?" Answer: Sharp head turn as to say, "Hey, what's going on?"

MINI-LECTURE: This preprogrammed behavior helps the infant to learn another important communication skill: turntaking. The infant is learning how to play the speaker's role and the listener's role in a conversation. The infant's ability to give a turn or wait for a turn are at the root of being able to communicate with others. This is also the reason a baby will turn away from a person who cannot or will not interact with reciprocity. The infant is also using reciprocity to learn how to use facial expressions, gestures, and movements to convey intentions.

OVERHEAD: Display and discuss, **"Self-Regulation Gaze Behaviors" overhead.**

HANDOUT: Distribute **"Self-Regulation and Reinitiation Behaviors" handout.**

POINT: Infants help to regulate engagement, if adults will read their cues.

DISCUSSION: Facilitator asks participants:

"What messages could these behaviors send to the mother (caregiver)?"

Possible answers include:
- Rejection
- Distancing away from
- Defending themselves against mother (caregiver)

This activity can be called the early form of communication between infant and mother (caregiver). Not only can the infant initiate, maintain, end, or avoid a social contact, he can also re-initiate social contact.

OVERHEAD: Display and read, **"Infant Reinitiates" overhead.**

MINI-LECTURE: This is the same developmental task the twelve to fifteen month old child is practicing when he walks away and then returns to his mother. Most mothers know that infants will demonstrate their independence with gaze aversion at four months, gestures and vocal intonations at seven months, running away from parent at about fourteen months and with a great deal of language fluency at two years.

EXAMPLE: "No! I no go inside. I play here!"

HANDOUT: Distribute and go over **"Non-Verbal Behaviors that Signal Readiness to Communicate".**

ACTIVITY: Now we are going to view a video tape "First Feelings", excerpt on Communication Dance with Dr. Tronick. This video is a part of the PBS Nova Series. It will demonstrate most of what we have gone over with the exception of the vocal behaviors. Notice the cues the infant sends the mother. See if you can find evidence of the communicative aspects of turn-taking and responding which makes up the "communication dance".

HANDOUT: After viewing the video, distribute **handout "Communication Dance".**

DISCUSSION: Ask:

- What evidence did you see of turn taking?
- How did the baby react when the mother was responsive?
- What self-regulating behaviors did the baby show when the mother was non-responsive?
- How did the infant try to exert his control over the sequence?

Have participants respond to questions on handout.

SUMMARY: To summarize use the next handout to help participants recall what they discovered about infant communication.

HANDOUT: Distribute **handout, "What we know about Infant Communication"**. Discuss by asking participants for examples of each statement.

1. Infants are able to modify their behavior appropriately during social interaction.
2. When interaction is distorted, infants engage in behaviors that are aimed a reinstating the normal interactions.
3. When they do not succeed, infants become distressed.
4. Infants strive to establish mutual exchanges.
5. The rules of interaction are built into the infant.
6. The infant regulates the interaction, as well as the mother, as evidenced during distorted interactions, in which the infant acts to change things and establish a more normal exchange again.

OBJECTIVE 2

To assist parents and caregivers in understanding the primary functions of language.

OVERHEAD: Display, **"Primary Functions of Language" overhead**.

MINI-LECTURE: A newborn's task is to regulate sleeping, feeding, quieting, and arousal. Part of the newborn's task is to teach his caregiver how to facilitate the daily routine and to help regulate his needs. The caregiver's task is to learn the cues the infant gives to call attention to what needs to be regulated. Recall the discriminative tactile system, the pathway for an infant to learn about the properties of his environment. Once those properties are experienced, the infant stores the information and can recall that experience.

A newborn communicates discomfort by crying. The newborn may not yet be able to distinguish hunger from the need to shift positions, but he still communicates discomfort.

The infant responds to the discomfort (stimulus) by crying (response) and someone comes to check the infant (consequence). The consequence always reinforces the response. Being attended to reinforces the crying which is intended to get the caregiver's attention. This contingent responsiveness sequence becomes a part of the infant's memory. By the time the infant is two months old, the infant begins to actively regulate interactions with caregivers. This is called infant communicative intent (Edward Tronick). Adult communicative intent has been described as the desire to communicate, to understand, to be understood, to keep two minds focused on the same topic.

POINT: A primary function of language is to help establish the infant's psycho-social well being.

Infant communicative intent can be seen in Baby Talk. The expectation that he will be understood is higher in the developmental sequence than the expectations of direct learning and turntaking. The infant expects that his cues will be read accurately and responded to. Dr. Michael Lewis at Rutgers University found that a major characteristic of the most advanced one-year-olds in their research group was that each had a parent who consistently and accurately read their distress cues and responded to those cues.

The caregiver has an important role in helping the infant develop communicative intent. It is the caregiver's role to share and teach the communication goals and rules.

POINT: A primary function of language is to help the infant obtain physical wants and needs.

Recall in the Sensorimotor section the description of the infant crying to get her needs met. If the infant is wet or hungry she has the experience to know that if she cries someone will come and attend to her. This is called infant communicative intent and will be addressed later in this session.

About the fourth month, a baby is drawn to explore the environment: toys, objects, and people. You can help the baby's shift from self to the outer world by using your "Baby Talk" to enhance this transition. You can use your voice to help the baby sort out or identify all those wonderful things waiting to be explored. For this reason, labeling is an important element of "Baby Talk" about the fifth month.

New parents may feel very shy about expressing excitement in "Baby Talk." However, the baby's response, which is almost always enthusiastic, soon pulls the parents into an animated and spirited exchange. Labeling occurs over and over again to accommodate the baby's learning.

POINT: A primary function of language is to gain and share information.

In order to gain and share information, a toddler must be able to understand the rules that direct human communication. The child must be able to track, identify, and mimic our sounds. This is one of the reasons the infant will gaze at your mouth as you speak.

Conversational interactions between mother or caregiver and child permit him to simultaneously entertain the meaning of what was said and to hear a correct adult expression of that meaning.

Researchers generally agree that this skill involves two levels of complexity.

OVERHEAD: Display **overhead, "LEVELS OF COMPLEXITY"** and explain:

1) The level of voice pitch very close to his own so that he can process it and comprehend the meaning

2) The other level is that what is said should be slightly more complex than the infant's own ability

MINI-LECTURE: Baby may be able to say "Pa-pa" and smack his lips to say "I am hungry!" The adult response should be something like, "Billy wants pa-pa." or, "Billy is hungry. Billy wants pa-pa."

This sequence allows the infant to see the relationship between the way he expresses hunger and the more sophisticated way to express hunger. Before this can happen, look at another aspect called "protolanguage".

The "ahhhs" or "ooohs" and other similar sounds are called "protolanguage". Protolanguage has been determined to be a two-track phenomenon. Track one is composed of the short squeaky sounds that emerge during the third through sixth weeks. These are usually vowel-like sounds. Between the fifth and sixth month the next track emerges, and syllable-like sounds emerge.

DISCUSSION: Ask participants: "Which consonants are made first?"

Answer: p, b, m

OVERHEAD: Display **overhead, "P, B, M Easier Consonants".**

DISCUSSION: Which are the hardest consonants to produce?

OVERHEAD: Display **overhead, "S, Z, R, L, SH, ZH, CH, J, TH, (voiced & voiceless) Consonant blends."** (Most difficult consonants)

DISCUSSION: Why does this happen? Protolanguage begins with vowel sounds. **Vowel sounds** are made by changing lip, tongue, and jaw positions. **Consonants** are formed later in a variety of ways using different muscle groups.

OVERHEAD: Display **overhead, "M, N, NG."** (Nasal Sounds)

ACTIVITY: Have participants place the side of their hand down the length of their nose and hold it there as they produce the sounds indicated by the letters on the overhead. Ask participants what they felt. They should feel the sound resonating in their nose. The sounds these letters make carry nasal qualities that means they are produced through the nose, not the mouth. These are the sounds one hears frequently in the French language.

OVERHEAD: Next, display **overhead, "P, T, K."** (plosive sounds)

ACTIVITY: Ask participants to place their hand about two inches from their mouth and produce the sounds these letters represent. Again ask what they felt. They should say air hitting their hand. These are the letters that produce sounds with an explosive quality caused by the air rushing out of the mouth!

MINI-LECTURE: We borrow the mechanisms used for breathing and eating in order to produce speech. If you recall in the Sensorimotor workshop, we discussed the suck-swallow-breath sequence and the rooting reflex, which are also priming the infant for speech sound production.

ACTIVITY: Have participants turn to one another and say "Hello." Ask participants to describe the sequence they used. In order to say hello, participants took in air **(suck)**; said hello **(swallow)**; and expelled the air from their lungs **(breath)**.

MINI-LECTURE: The ability to produce the sounds we have just discussed is dependent on the infant's ability to use these same muscle groups. In addition, memory and listening skills are used by the infant in order to produce these sounds.

Linguistics and speech/language professionals call this sound production phonology or the language sound system.

DISCUSSION: Ask participants: "How do infants obtain information?" Answer should be through their senses. Then ask: Which sensory made does the infant rely on most for receiving information about objects?" Participants should answer mouthing or touching.

MINI-LECTURE: One of the first tasks a parent takes on is teaching a baby to avoid hazards around the house. Mom may be preparing lunch at the stove with her eight month old baby in her arms. Baby sees her stirring the pot and reaches toward the pot. Mom says, "No! That's hot! Hot! Owee." Mom may let the baby reach far enough to feel the heat and then pull back repeating, "No! Hot! Owee!" The baby than tries to aspirate the word, "Hot." Mom says, "Yes, hot." The infant learned through touch the concept of hot; mother gave the concept a label, and name.

Later, the baby watches the fire being made in the fireplace. With delight and excitement he crawls to the fireplace. Again, he is allowed only close enough to feel the heat and is told again "No! Hot!" Baby remembers hot and plays a game of reaching his hand out toward the fireplace, trying to say hot, jerking his hand away and looking at Mom for approval. If he could not explore the fireplace, he had to explore the situation and therefore created a game to find out more about fire, hot, and Mom's reaction to his coming in contact with fire.

Through this sequence the infant used the skills of sensing, perceiving, discriminating, remembering, retrieving, identifying, and exploring. All of these skills were possible in this instance because language facilitated his cognitive skills.

POINT: A primary function of language is to provide a base for cognition.

When you, the parent or the caregiver, look at, smile at, or talk to your infant, he will respond by opening his eyes wide. He will smile or he will begin to smile. He will focus all his attention on you. This is part of the general patterns of social alertness of becoming more responsive to external social interactions. From two to four months of age, along with development of his cognitive skills he is also demonstrating selective interest in the most special aspect of her life: parents and caregivers.

At this stage the infant shows a growing intimacy with the human world. This is the period of time when adults delight in the notion that the infant recognizes them. The infant is beginning to integrate the different areas of development as he makes sense of his world. Communication with his environment is an important factor in his overall development. There are ways that adults can foster the infant's new relationships to his world. We look at how vision and hearing affect our interactions with infants and how we can help foster communicative intent in infants.

HANDOUT: Distribute **handout, "Helping Techniques"**, and review with participants. Remember that these are behaviors that many adults seem to naturally elicit when they interact with infants.

Facilitator Note: As noted in the introduction, the facilitator should be aware of the cultural practices of the local community. It is particularly important to note that the following piece of training is strictly from a "mainstream" approach to language learning, meaning that the culture believes that babies can communicate.

There are cultures that do not believe that babies can have communicative intent, and socialize infants in different ways. Examples: Instead of teaching labels some cultures teach polite words for socialization. In other cultures loud words, words that create action are learned by infants first. These words are often shouted and create definite reactions so that an infant may learn curse words because they create excitement.

It would be very important to find out which language learning approaches are practiced in the trainee's community and address those approaches along with the "mainstream" approach presented in this manual.

MINI-LECTURE: A baby's first words are mostly labels for people, animals, or things that are important to them. Recall the Sensorimotor session's discussion of the infant learning to associate someone responding to her cries of distress if she was hungry or wet? The same process is occuring when parents or caregivers begin to label people, pets, or objects for the baby. Parents seem to have the innate ability to perform this task without being coached to say the word while showing the baby the person or object. It also appears that no one has to teach a parent that one must respond with a great deal of animation, excitement,or physical displays of affection when he sees the baby has made the connection. The baby is beginning to make associations between labels and persons or objects. Through this process she is beginning to understand and to organize her world. Through the labeling process, she is developing the foundation for future cognitive learning.

Although the baby is just beginning to make associations, parents and caregivers should focus on giving baby lots of talk to listen to, lots of opportunities for grasping the meaning of words, while providing an immediate and pleasant social response to sounds she makes.

The baby will learn the names of people or things which are emotionally important or pleasurably exciting to her. Researchers believe that pleasant emotions may be key to infant speech development because babies are born with certain abilities.

OVERHEAD: Display **overhead, "Born With. . ."** and review with participants. Explain the interest in listening to the human voice, and producing babbling sounds in a social situation when being held or played with by an adult.

HANDOUT: Distribute **handout, "Infant's Language Development."** Review sections before 9 months. Stop here and then continue with mini-lecture and overhead. After the mini-lecture you will come back and finish going over **handout** with participants.

INFANT'S LANGUAGE DEVELOPMENT

BABBLING AT 3-4 MONTHS: Baby's sounds are open vowels (babbling sounds identical for all human babies)

- called the cooing stage
- first consonants added to cooing: P,B, and M
- will babble more fluently if talked to a great deal, but will babble some even if badly neglected or is deaf

4-5 MONTHS:

- being talked to will help baby talk more
- the talking helps to speed up rate at which the baby learns to make more complex sounds

OVERHEAD: Display **overhead, "When You Speak, He Will,"** and say: These are behaviors that the infant is displaying at this time he will:"

1) listen intently
2) watch your face
3) when your word flow stops, answer you

MINI-LECTURE: You find when the baby is alone he will practice his repertoire of sounds. He is also learning your voice and learning to distinguish voices of familiar persons: brothers, sisters, grandparents, aunts, uncles, and caregivers. By eight months most babies are using specific elaborations.

OVERHEAD: Display **overhead, "Elaborations,"** and review:

Cooing turns to two syllables:
"mumum" and "booboo" and "papa"

Gradually these become separate from each other with less musical cooing.

A new batch comes that is more exclamatory:
"Ahgoo!', "Ebbie!"

MINI-LECTURE: The infant's are beginning to take interest in adult conversation even if it is not directed to them. They become more active in their interaction with others.

They "shout for attention", making a speech sound with a specific communicative intent.

After learning to "shout", babies begin to sing, which sounds like approximately four notes up or down a scale. (set up by your singing or radio or TV themes or commercial's music)

OVERHEAD: Display **overhead, "By Eight Months"** as a review.

- Take interest in adult conversations
- Shout for attention
- Learn to sing

FACILITATOR: Now return to the **handout** and finish developmental sequence review.

INFANT'S LANGUAGE DEVELOPMENT

9 MONTHS:

- speech becomes elaborate with long drawn out series of syllables "too-too-too-too-too-too"
- begins to inflect and change emphasis of his sounds (forming the sound patterns of questions, exclamations, etc.)
- combines all the known syllables into long complicated sentences: "ma-ma-ah-dah-dee-boo-maa"
- this combination signals baby is on the verge of producing real words

10TH/11TH MONTHS:

- Most babies produce first real words

8 - 12 MONTHS:

- will learn meanings of many words before actually saying more than one or two
- will use words which to him mean something joyful or exciting

- first words come slowly but understanding of words continues at a rapid rate - baby is listening and learning to understand

MINI-LECTURE: There are many ways parents and caregivers can help babies to learn language that can be exciting and rewarding to both the baby and the parent or caregiver. The next handout will give you some simple suggestions.

HANDOUT: Distribute **handout "Helping Baby to Learn Language,"** and review with participants.

HELPING BABY TO LEARN LANGUAGE

Try to understand child's baby talk:
- by reacting to his sounds you help to motivate him to increase his speech sounds
- you make it clear that you care what he says
- you show your effort to understand any communicative attempt

Do not correct or pretend not to understand baby's words:
- trying to make baby say the word correctly will only bore baby
- if you refuse to acknowledge what he communicates to you until he has said it correctly, he will probably get frustrated, become upset and lose interest.
- baby is not trying to imitate language, baby is trying to develop language

Show baby a picture book:
- point to things
- name things
- tell what they are doing

Tell baby what you are doing whenever you handle him. Example: undressing
- tell which garments you are removing
- tell what part of the body they are coming off

Ask questions:
- is it gone?
- is it hot?
- is that soft?
- is it sticky?

Listen to the baby:
- every time baby makes noises at you, try to respond in words

Talk directly to baby:
- general conversation is confusing
- when everyone in the family is talking, baby will become lost in the world of sounds
- will not learn language from strangers or a succession of caretakers
- will learn meanings of words hearing them over and over in different sentences and with varying tones of voice, facial and body language from parents and caretakers

Use key labeling words:
- baby will single out label words which continually reoccur in different sentences. Example: baby's own name is a vital label for him to learn. Use his name instead of "Good morning, baby!", say "Good morning, Steve!"

Talk about the physically present:
- talk about things baby can see and make the connection between the object and the reoccurring key word

Talk about things that interest the baby:
- if not immediately visable be sure the subject has meaning to the baby
- while he may not understand everything you say, he will pick up on the subject matter

Overact:
- use lots of gestures and expressions
- point to things you are talking about

MINI-LECTURE SUMMARY: We have examined the way babies learn language. We have been reminded that the one of the most important facilitators to baby's language learning is the parents' and caregiver's ability to read baby's cues correctly and give the correct response. Now let's see what happens when baby becomes a toddler.

TODDLERS AND LANGUAGE

OBJECTIVE 3

To assist parents and professionals understand a toddler's grasp and use of language.

MINI-LECTURE: To the toddler, understanding language is more important than speaking it. At this stage, you want to continue to add to the built-in interest he has in human voices and the natural tendency he has to listen to you, and to concentrate on you when you speak to him. The following handout will remind us of what tasks toddlers are ready to perform.

HANDOUT: Distribute **handout, "Toddler's Communication"** and review with participants.

Let the toddler:

- see what you mean by matching what you do to what you say
- see what you feel by matching what you say with your facial expression
- realize that all talk is communication by answering when he or other family member speak to you
- speak to friends and relatives you do not see often; be his interpreter when he is not understood
- understand your overall communication. Understanding your exact words is not the issue, rather that he learns the meaning of the words in helpful contexts.

Listen to the toddler using phrases as one word:

- Phrases he has heard for months often seem like a word to him.
- When used with another word he may have a hard time getting the grammar right.

EXAMPLE: "Pick it up", "Give them to me", and "Put it on" which he has heard over and over, may become "Give me it" or "Give to me".

MINI-LECTURE: Since one of the primary functions of language is to provide a basis for cognition, let's take a look at the early aspects of language learning.

There are two categories: **Descriptive** Language and **Expression** of Interactive Ideas.

Descriptive: Parents and caregivers provide the young language-learning child with a data base at this point that is primarily labels. We will discuss Expression of Interactive Ideas in more detail when we look at the Preschool child. For toddlers we will discuss **Descriptive** Language.

OVERHEAD: Display **overhead, "Descriptive Language"** and review.

MINI-LECTURE: In this category the toddler may resemble a foreigner who cannot speak the language, but can make himself understood. It is also the time when parents or caregivers have to translate the child's language to friends and relatives.

The second category is the **Expression of Interactive Ideas.**

EXAMPLE: The child recalls a promise made earlier: "If you will eat your lunch, I will let you watch cartoons this afternoon." Child eats lunch, plays, takes a nap and then reminds Mom, "Now I see cartoons".

Facilitator Note: This is another example of the "mainstream" style of language learning. Much of the current research says that those children who speak in one or two word phrases have clear articulation. The same body of research says that those children who do not have as clear articulation say units of words and learn action words. These children say whole phrases without going through the one-word, two-word labeling process. While they may not have clear articulation they are not speech and language delayed children.

Babies first words are mostly labels for people, animals, or things that are important to them. Toddlers often turn next to their own clothes with shoes being favored since they stay on much longer and are more visable than the dress, shirt, or pants.

Many toddlers do not get beyond this stage until the middle of their second year. The new words may come very slowly at first, perhaps one or two a month. The toddler is storing up an understanding of language. Around twenty months the toddler will unleash many new words. The toddler who can say only ten words at the age of eighteen months may use two hundred by her second birthday.

Because the toddler is most interested in things that directly involve her, these new words will be centered on her. Her body parts, toothbrush, furniture such as crib, chair, etc. will be labels she will use.

The two-word stage comes after the toddler has acquired a collection of single words she has used with varying intonations and meanings. The two-word stage occurs naturally without prompting. The second word is added to communicate a more exact meaning.

The two-word phrases help us to understand the toddler's thought processes. You might be able to see that she is beginning to think about things that are not physically present.

EXAMPLE: Toddler wanders around the house saying, "Sissy?, Sissy?" Her sister may be at school and not even in the house.

Soon she may add another one or two words to make sentences. They may not be correct grammatically. However, if you try to correct her, she will sense your disapproval and may stop talking. At this stage, she needs to explore sending messages, so that she can feel that any message she sends is welcomed. The adult's responsibility becomes to listen not just to the word, but to the way she says the word.

Facilitator Note: Remind participants that the toddler needs clear directions. Sarcasm does not work with young children; it confuses them.

POINT: The toddler's method of learning is still experiential and highly interactive. Parents and caregivers are the toddlers' main source of information.

MINI-LECTURE: The toddler will speak his language. He will listen to you as you speak yours. Your understanding his responses will maintain his interest in communicating with you. Your correct speech model, at this stage is more beneficial to him than forcing him to imitate grammatically-correct sentences. With your continued modeling he will, piece by piece, adapt his own speech.

Now is the time to stop responding in "Baby Talk". He is ready to try new things. If his word for drink is "brink" and he says, "I want brink", do not pretend you do not understand him. Do not withhold the drink as a means to make him say "drink". Instead, give him his drink and say, "Here is your drink".

A two year old child can now put two words together to express her ideas. She is beginning to make sentences. Other communication skills include:

- She is now responding to sounds out of sight. She will respond to sister or brother when they are in another room. She will respond when she hears the family pet outside the house.
- She is still experimenting with sounds and makes errors but family or caregivers can understand her.
- She now enjoys listening to records and television. It is a great time to introduce fingerplays.
- She can now follow simple directions such as one step commands.

- She can now use gestures to help her get her point across.

Parents and caregivers sometimes get frustrated, confused, or exasperated because what the toddler is saying does not convey a clear message. It may seem the child is giving you only a partial message or a totally confused message. Parents and caregivers are sometimes forced to play detective to try to solve the mystery of a toddler's message. If this is a taxing job for the adults, it is even more difficult for the toddler. He knows what he is saying, it is the adults who do not understand! Toddlers can show you, by the puzzled looks they direct at you, that you are not as smart as they thought you were. Perhaps the following handout can assist you the next time you have to play detective.

HANDOUT: Distribute and go over the **handout, "Toddler's Grammar."**

TODDLER'S GRAMMAR

Listen to the order of the toddler's words:

- "Daddy door" might mean daddy's at the door
- "Door Daddy" might mean daddy, open the door

Listen to the manner in which the toddler forms the past tense:

(Many verbs are created by adding the "d" sound)

- "She comed" is a toddlers way of extending the rule.

- "She hurted me" is a toddlers way of adding the "d" sound even though the verb is already in the past tense.

Listen to the manner in which plurals are made: (Many words are pluralized by adding an "s" or "z" sound)

- Toddler extends this to say:
  - feets
  - mans

- mouses
- shoeses

As you review **handout**, ask participants for additional examples.

HANDOUT: Distribute **"Two-Year-Old Communication Skills" handout** and review with participants. Ask participants to give examples of each communication skill.

POINT: Parents and caregivers must act as language role models for the toddler. Toddlers are NOT ready for grammatical explanations.

THE PRESCHOOL CHILD AND LANGUAGE

OBJECTIVE 4

To assist parents and caregivers in understanding the preschool child's grasp and use of language.

MINI-LECTURE:	After children pass the toddler stage using language becomes more difficult. As toddlers they were learning about labels and labeling their world.
OVERHEAD:	Display and review **overhead, "The Toddler's World,"** with participants.
MINI-LECTURE:	If you recall, the toddler is learning to use descriptive language. The preschool child is learning **Expression of Interactive Ideas**. Now the preschool child begins to use language for its uniquely human purpose:
OVERHEAD:	Display and review **overhead, "Language For Its Uniquely Human Purpose."**
MINI-LECTURE:	Preschool children are moving away from the concrete concepts of the here and now that can be seen, touched, or heard to the semi-abstract. The more language they have, the faster language will progress. The more they think, the more language they use. Let's look just at just a few of the tasks the preschool child is ready to explore.

POINT: The preschool child begins to exert her autonomy through language. She is not strictly dependent on parents and caregivers to interpret the sound to her.

HANDOUT:

Distribute **handout, "Preschool Child's World,"** and review with participants.

The Preschool Child Is Ready To

- Find out how things work
  that's why they love to take things apart
- Find out what they can accomplish
  they want to try things out for themselves
- Use their imagination in Fantasy Play to:
  - Explore occupations
    - playing mailperson
    - playing firefighter
    - playing policeman/policewoman
  - explore species
    - playing horses
    - playing puppies
  - explore settings they only know through TV
    - traveling through space
    - traveling on the ocean's floor
  - explore relationships
    - play mommy
    - play daddy
    - play baby
    - play friends
  - explore emotions
    - establish and build friendships
    - express emotions

LANGUAGE PROVIDES THE MEANS FOR THE CHILD TO ACCOMPLISH THESE EXPLORATIONS

MINI-LECTURE:

The preschool child will need language to accomplish all of these tasks. The child who is helped to use language in his explorations will be able to draw on all of his knowledge. It is his talking that feeds and nurtures his intelligence.

The conversation at this stage is no longer just sound and rhythm labeled talk. Its purpose is now genuine communicative intent. The preschool child will know when you are not really listening. If this continues, the child will soon interpret your non-listening behavior as not valuing what he has to say. This is a message that child will react to in several ways: if the child has had his cues responded to as an infant and toddler he will be confident enough to get your attention with very pointed messages. Adults may refer to these vocalizations and behaviors as temper-tantrums. These temper tantrums are a call for attention. They are saying, "Listen to me!" The worst case is the child who just shuts down, the child who stops seeking to communicate.

POINT: The preschool child needs real words to express ideas and thoughts about her world.

Words are power. Words are control. The use of words helps the preschool child feel more able to control his world. It is your continued interest and your responses to his communicative attempts that foster his feeling of being in control. This leads to the child's continued motivation to explore and extend his communication skills.

HANDOUT: Distribute **handout, "How to Help the Preschool Child with Language."** Review "Grammar" and "Pronoun" sections with participants.

HOW TO HELP THE PRESCHOOL CHILD WITH LANGUAGE

Grammar: the child's conversation now includes

- nouns: function is to label things
- adjectives: function is to describe those things
- verbs: function is to tell what they do

Pronouns: the preschool finds them very confusing because their meaning is dependent on who is talking.

Example: Child burps and mom says "Say excuse you!", child responds, "excuse you". Mom says, "No, excuse

YOU!". Mom realizes what's happening and says pointing to the child, "You burped, you say 'Excuse me'". Mom finishes the sequence with, "You are excused!"

MINI-LECTURE: Because of this confusion some children continue to use proper names for pronouns.

Do not try to make the child use pronouns. You need to use pronouns correctly. Instead of saying, "Does Ryan want Mommy to play?" say, "Do you want me to play?".

FACILITATOR: Continue to review, **"How To Help"** with participants, beginning with "Questions".

MINI-LECTURE: The ready adult response, " Because, I said so," or "Because that's the way it is," does not give the child the information he is seeking.

The next handout shows us in what ways children use language to help them feel in charge and connected to others.

HANDOUT: Distribute and review **handout, "Children's Words"** with participants. The sections are highlighted in the mini-lecture.

Facilitator Note: Before giving the mini-lecture on "words to control own behavior," the facilitator should be aware of the cultural practices of the community. Again this manual gives the "mainstream" style. In some cultures, the society determines the child's development rather than the individual. In other societies, the environment places the guidelines so that the controls become internal rather than external.

MINI-LECTURE: **Words to Control Own Behavior**

Remember that children are trying to gain autonomy and words are their power source. The three-year-old is experimenting with words to control his own behavior. A new self-discipline is demonstrated in what the child says to himself as he plays. He will use the same controlling statements he has heard from you with his toys or friends.

Example: "Don't talk with your mouth full!"

The next action the child takes on is to warn himself of the event. "Don't spill it" is often stated after he has spilled the drink he was drinking. However, he is learning that words may help him control his behavior.

The sign to look for that indicates he is ready to take and use instructions or rules is when he warns himself in advance. This typically occurs about the age of four or five.

Example: "I'm not supposed to touch that." And the child walks away.

Words to Control Other's Behaviors

Three and four-year-olds have a tendency to sound bossy. They have been hearing controlling talk and are now trying it out.

Example: "Mommy, I want you now!" He has been bossed around and now he is trying to be the boss. But he is also trying to find out if his words are as powerful as yours are.

This stage can be troublesome if this controlling language is viewed as disrespectful or disobedient.

If this bossiness is perceived as rude behavior, teach the child to add "please" to his commands and change his tone of voice. You can also teach him to add "thank you" when his request has been fulfilled.

Most important, remember when he is at his bossiest, that he has learned the controlling words. Someone with whom he is very close, may also be sounding very bossy. He will naturally mimic that person's behavior.

DISCUSSION: Ask participants if they can recall other examples of children's controlling words and allow for discussion.

MINI-LECTURE: **Words to Ask for Approval**

The same four-year-old who often sounds bossy may say, "I'm a good boy." Sometimes this signals his need for assurance that you love him when you do not love what he did.

A response of, "Good? What did you do that makes you so good?" will hurt his feelings and confuse him. He is very literal and mixed messages or sarcasm only serve to confuse.

POINT: The preschool child is learning to express his thoughts, feelings, and ideas through words.

HANDOUTS:

Distribute **handouts, "Three-Year-Old Communication Skills"** and **"Four-and Five-Year-Old Communication Skills"** and use for summary of this session.

MINI-LECTURE SUMMARY:

As a way of reviewing this session, let's go over the Three-Year-Old Communication Skill **handout**.

Facilitator Note: Review **handout** to support points addressed in the lecture. Ask for questions.

The four-and five-year-old child continues to build on his communication skills. The last handout, "Four-and Five-Year-Old Communication Skills," will show us how children build on already acquired skills.

All young children are active and not passive learners. They rely on parents and caregivers to provide the communication models in order to acquire their communication skills. Along with the modeling adults provide, children seek reassurance and encouragement from parents and caregivers that what they have to say is important. In this way, children learn to talk and listen.

SUMMARY:

We have also spent a lot of time talking about reading cues accurately and giving appropriate responses. In the next workshop you will explore temperament and how individual temperament will make a difference in our ability to read cues correctly.

TRAINING MATERIALS

Table of Contents:

HANDOUTS:

Infant Communication
Self Regulation and Reinitiation Behaviors
Non-Verbal Behaviors That Signal Readiness To Communicate
The Communication Dance
What We Know About Infant Communication
Helping Techniques
Infants' Language Development
Helping Baby To Learn Language
Toddlers' Communication
Toddlers' Grammar
Two-Year Old Communication Skills
The Preschool Child's World
How To Help The Preschool Child With Language
Children's Words
Three Year Old Communication Skills
Four and Five Year Old Communication Skills
Techniques To Facilitate Language Development

OVERHEADS:

Baby Talk
To Teach
Function of Early Language Input
Infant Control
Self-Regulation Gaze Behaviors
Infant Reinitiates Engagement
Primary Functions of Language
Levels of Complexity
Easiest Consonants to Produce
Most Difficult Consonants to Produce
Nasal Sounds
Plosive Sounds
Born With. . .
When you Speak, He Will
Elaborations
By Eight Months
Descriptive Language
The Toddler's World
Language for It's Uniquely Human Purpose

BACKGROUND INFORMATION FOR FACILITATOR:

"Children's Play: Reflections of Social Competence"
Reference List

SUPPLEMENTAL MATERIALS:

Definitions of Terms Associated With Speech/Language

HANDOUTS

INFANT COMMUNICATION

Baby talk is:

- relatively stable, follows predictable patterns
- conventionalized, almost anyone can interact with an infant using baby talk
- culturally transmitted, during the early stages of infancy babies respond to other languages the same as they do their parents' language, later they do not
- often initiated by adults, although infants are very capable of initiating communication

Functions of early language input:

- to gain and hold the infant's attention
- to establish the affectional bond between the infant and the caregiver
- to allow the earliest communication between infant and caregiver to take place

Effects of caregivers voice pitch and intonation patterns:

1. Where is emphasis placed when you ask a question?
2. Where is emphasis placed when you make an exclamation?
3. Where is emphasis placed when you make a demand?
4. What voice pitch and intonation pattern do you use to: get infant's attention?
   hold an infant's attention?

Infants exert their control over the:

- initiation
- maintenance
- termination
- avoidance
- re-initiation

of social contact with the caregiver

SELF-REGULATION AND REINITIATION BEHAVIORS

Observable infant self-regulation gaze behaviors:

- avert gaze
- shut eyes
- stare past
- become glassy-eyed

Infant re-initiates engagement through:

- gazing
- smiling
- vocalizing

WHEN HE IS READY. IF ADULTS CAN READ THE INFANT'S CUES, THE INFANT IS AN INTERACTIVE PARTICIPANT AND WILL HELP TO REGULATE ENGAGEMENT, MAINTENANCE, DISENGAGEMENT, AND RE-ENGAGEMENT.

NON-VERBAL BEHAVIORS THAT SIGNAL READINESS TO COMMUNICATE

EYE MOVEMENT: Eyes focus on moving object and track object's movement. Eyes focus on caregiver's mouth.

GAZE: By the fourth month, infants are beginning to use gaze to initiate, maintain, terminate, and avoid interactions.

HEAD ORIENTATION: Head control is usually in place by the sixth month. Infants use gaze and head aversion to the side with head lowered to say, "stop".

They use gaze and head aversion to the side with the head raising , and looking up to say, "hold".

They avert their head past 100° from target to escape or withdraw.

UPPER BODY: Between 5-12 months, motoric control may include sitting postures; coordination and voluntary control of arms and hands; crawling and cruising. Interest shifts from human face, voice, and touch of objects.

LOWER BODY: Onset of walking; "moving to" signals readiness, "moving away" means not interested.

GESTURING: Some gestures infants use include: clasping hands to regulate, drooling when distressed, slack mouth when distressed, pointing, and grasping, and flailing arms and legs when excited.

THE COMMUNICATION DANCE

- What evidence did you see of turn taking?

- How did the baby react when the mother was responsive?

- What self-regulating behaviors did the baby show when the mother was non-responsive?

- How did the infant try to exert his control over the sequence?

WHAT WE KNOW ABOUT INFANT COMMUNICATION

1. Infants are able to modify their behavior appropriately during social interaction.

2. When interaction is distorted, infants engage in behaviors that are aimed a reinstating the normal interactions.

3. When they do not succeed, infants become distressed.

4. Infants strive to establish mutual exchanges.

5. The rules of interaction are built into the infant.

6. The infant regulates the interaction, as well as the mother, as evidenced during distorted interactions, in which the infant acts to change things and establish a more normal exchange again.

HELPING TECHNIQUES

For Vision:

- Make eye contact
  Look at the infant without talking
- Make interesting facial expressions and see if the infant responds
  - * Look of surprise
  - * Raised eyebrows
  - * Make fish lips and open and close them
  - * Blink eyes rapidly etc.
- Move bright object slowly from left to right and back again to see if infant will track object
- If you smile, baby's face lights up or at least returns your smile

For Hearing:

- Introduce sounds
  "ma-ma - - ma,ma" infant will try to imitate sounds, mimic your mouth
- Change intonation patterns
  "ma-ma - - Ma-ma" infant will try to imitate patterns, mimic your mouth
- Approach infant from the side, gently call her name to see if she will try to locate you

Fostering Communicative Intent

Reciprocity in responding to infant's signals:

- Returning baby's smile
- Reaching out with your hand when baby reaches out with hers
- Imitating infant's baby talk
- Imitating infant's expression (if he purposefully blinks, you blink)

These actions help the infant to understand that his behavior can elicit a response from you. This helps him to understand that what he feels and does makes a difference.

INFANT'S LANGUAGE DEVELOPMENT

BABBLING AT 3-4 MONTHS:

Baby's sounds are open vowels (babbling sounds identical for all human babies)

- called the cooing stage
- first consonants added to cooing: P,B, and M
- will babble more fluently if talked to a great deal, but will babble some even if badly neglected or is deaf

4-5 MONTHS:

- being talked to will help baby talk more
- the talking helps to speed up rate at which the baby learns to make more complex sounds

9 MONTHS:

- speech becomes elaborate with long drawn out series of syllables "too-too-too-too-too-too"
- begins to inflect and change emphasis of his sounds (forming the sound patterns of questions, exclamations, etc.)
- combines all the known syllables into long complicated sentences: "ma-ma-ah-dah-dee-boo-maa"
- this combination signals baby is on the verge of producing real words

10TH/11TH MONTHS:

- Most babies produce first real words

8 - 12 MONTHS:

- will learn meanings of many words before actually saying more than one or two
- will use words which to him mean something joyful or exciting
- first words come slowly but understanding of words continues at a rapid rate - baby is listening and learning to understand

HELPING BABY TO LEARN LANGUAGE

Try to understand child's baby talk:

- by reacting to his sounds you help to motivate him to increase his speech sounds
- you make it clear that you care what he says
- you show your effort to understand any communicative attempt

Do not correct or pretend not to understand baby's words:

- trying to make baby say the word correctly will only bore baby
- if you refuse to acknowledge what he communicates to you until he has said it correctly, he will probably get frustrated, become upset and lose interest.
- baby is not trying to imitate language, baby is trying to develop language

Show baby a picture book:

- point to things
- name things
- tell what they are doing

Tell baby what you are doing whenever you handle him. Example: undressing

- tell which garments you are removing
- tell what part of the body they are coming off

Ask questions:

- is it gone?
- is it hot?
- is that soft?
- is it sticky?

Listen to the baby:

- every time baby makes noises at you try to respond in words

Talk directly to baby:

- general conversation is confusing
- when everyone in the family is talking, baby will become lost in the world of sounds
- will not learn language from strangers or a succession of caretakers
- will learn meanings of words hearing them over and over in different sentences and with varying tones of voice, facial and body language from parents and caretakers

Use key labeling words:

- baby will single out label words which continually reoccur in different sentences. Example: baby's own name is a vital label for him to learn. Use his name instead of "Good morning, baby!", say "Good morning, Steve!"

Talk about the physically present:

- talk about things baby can see and make the connection between the object and the reoccurring key word

Talk about things that interest the baby:

- if not immediately visable be sure the subject has meaning to the baby
- while he may not understand everything you say, he will pick up on the subject matter

Overact:

- use lots of gestures and expressions
- point to things you are talking about

TODDLER'S COMMUNICATION

Let the toddler:

- see what you mean by matching what you do to what you say
- see what you feel by matching what you say with your facial expression
- realize that all talk is communication by answering when he or other family member speak to you
- speak to friends and relatives you do not see often; be his interpreter when he is not understood
- understand your overall communication. Understanding your exact words is not the issue, rather that he learns the meaning of the words in helpful contexts.

Listen to the toddler using phrases as one word:

- Phrases he has heard for months often seem like a word to him.
- When used with another word he may have a hard time getting the grammar right. Example: "Pick it up", "Give them to me", and "Put it on" which he has heard over and over, may become "Give me it" or "Give to me".

TODDLER'S GRAMMAR

Listen to the order of the toddler's words:

- "Daddy door" might mean daddy's at the door
- "Door Daddy" might mean daddy, open the door

Listen to the manner in which the toddler forms the past tense: (Many verbs are created by adding the "d" sound)

- "She comed" is a toddlers way of extending the rule.
- "She hurted me" is a toddlers way of adding the "d" sound even though the verb is already in the past tense.

Listen to the manner in which plurals are made: (Many words are pluralized by adding an "s" or "z" sound)

Toddler extends these words to say:

- feets
- mans
- mouses
- shoeses

TWO-YEAR-OLD COMMUNICATION SKILLS

* Asks "what" and "where" questions

* Has the verbal ability to control others

  Example, "Come here!"

* Has the verbal ability to express feelings

  Example, "Mommy, I'm sleepy."

* Has the verbal ability to give information

  Example, "That her mommy."

* Uses simple sentences, usually complete

* May still make errors on combinations of sounds which are difficult

* May know simple rhymes, fingerplays, or songs

PRESCHOOL CHILD'S WORLD

The Pre-school Child Is Ready To

- Find out how things work
  that's why they love to take things apart
- Find out what they can accomplish
  they want to try things out for themselves
- Use their imagination in Fantasy Play to:
  - Explore occupations
    playing mailperson
    playing firefighter
    playing policeman/policewoman
    playing star fighter pilots
  - explore species
    playing horses
    playing puppies
  - explore settings they only know through TV
    traveling through space
    traveling on the ocean's floor
  - explore relationships
    play mommy
    play daddy
    play baby
    play friends
  - explore emotions
    establish and build friendships
    express emotions

LANGUAGE PROVIDES THE MEANS FOR THE CHILD TO ACCOMPLISH THESE EXPLORATIONS

HOW TO HELP THE PRESCHOOL CHILD WITH LANGUAGE

Grammar: the child's conversation now includes

- nouns: function is to label things
- adjectives: function is to describe those things
- verbs: function is to tell what they do

Pronouns: the preschool finds them very confusing because their meaning is dependent on who is talking.

Example: Child burps and mom says "Say excuse you!", child responds, "excuse you". Mom says, "No, excuse YOU!". Mom realizes what's happening and says pointing to the child, "You burped, you say 'Excuse me'". Mom finishes the sequence with, "You are excused!"

Questions: Questions, especially the "why" questions, may cause parents and caregivers to think that they will slowly be driven insane. The reality is that the child asks because he needs to know. This is the manner in which he can add to his knowledge bank; and we should understand that he is doing so in the most efficient manner possible.

Examples: "Daddy, why don't you shut the cows off, they won't let me sleep?" "Why won't the sun come out?" "Why can't I see Jesus?"

If you can give an answer: Do so simply and directly. The child is not yet ready for elaboration. He will let you know when he needs more information.

If you can not answer: Model for the child that there is nothing wrong with not having all the answers by saying, "I don't know, let's ask..." or "Let's look in a book..."

CHILDREN'S WORDS

Instructions: As we review the handout, can you think of examples you have heard children use? Write them down.

To Control Own Behavior

Example: "Don't talk with your mouth full!"

To Warn Self of Event

Example: "Don't spill it!"

To Warn Self in Advance

Example: "I'm not supposed to touch that!"

To Control Other's Behaviors

Example: "Mommy, I want you now!"

To Ask for Approval

Example: "I'm a good boy, huh?"

THREE-YEAR-OLD COMMUNICATION SKILLS

- Ask many questions
- Tell a little about what they are doing
- Say what they are doing
- Enjoy word games
- Talk about things they have just done
- Talk about some things they will do
- Tell you how to do something
- Talk to friends while playing
- May still make errors on combinations of sounds which are difficult
- May know simple rhymes, fingerplays, or songs

FOUR-AND FIVE-YEAR-OLD COMMUNICATION SKILLS

- Can tell a story

  4 year olds: about a storybook or TV show
  5 year olds: about storybook, TV show or own experience

- Asks, "who," "why," and "when" questions

- Understands most of what is said

- Carries on a conversation

- Has most of the basic rules used for forming sentences

- Can put together complex sentences by using: and, but, or because

- Show time concepts by saying, "When we go outside" or "Then we take a nap."

OVERHEADS

BABY TALK IS:

- RELATIVELY STABLE
- CONVENTIONALIZED
- CULTURALLY TRANSMITTED
- OFTEN INITIATED BY ADULTS

"TO TEACH THE CHILD TO SPEAK"

FUNCTIONS OF EARLY LANGUAGE INPUT

1. GAIN/HOLD INFANT'S ATTENTION
2. ESTABLISH AFFECTIONAL BOND BETWEEN INFANT AND CAREGIVER
3. ALLOW EARLIEST COMMUNICATION BETWEEN INFANT AND CAREGIVER TO TAKE PLACE

INFANT CONTROL

Infants exert their control over the:

Initiation
Maintenance
Termination
Avoidance
Re-initiation

of social contact with caregiver.

Infants help to regulate engagement.

SELF-REGULATION GAZE BEHAVIORS

1. AVERT GAZE

2. SHUT EYES

3. STARE PAST

4. BECOME GLASSY-EYED

INFANT RE-INITIATES ENGAGEMENT

through:

Gazing

Smiling

Vocalizing

when he is ready

PRIMARY FUNCTIONS OF LANGUAGE

* Establish the infant's psycho-social well being
* Help infant obtain physical wants and needs
* Gain and share information
* Provide a basis for cognition

LEVELS OF COMPLEXITY

1) level of voice pitch

2) slightly more complex than own

EASIEST CONSONANTS TO PRODUCE

P

B

M

MOST DIFFICULT CONSONSANTS TO PRODUCE

S

Z

R

L

SH

ZH

CH

J

TH, (voiced & voiceless)

Consonant Blends

NASAL SOUNDS

M

N

NG

PLOSIVE SOUNDS

P

T

K

BORN WITH. . .

- interest in listening to human voices

- tendency to produce babbling sounds of their own

WHEN YOU SPEAK, HE WILL

1) listen intently

2) watch your face

3) when your word flow stops, answer you

ELABORATIONS

Cooing turns to:

"mumum"

"booboo"

"papa"

Gradually these become separate.
Less musical cooing.

New batch more exclamatory:

"Ahgoo!"

"Ebbie!"

BY EIGHT MONTHS

- Take interest in adult conversations
- Shout for attention
- Learn to sing

DESCRIPTIVE LANGUAGE

A 16 month-old can name:

Favorite:

- people
- objects
- toys

Needs:

- thirst
- hunger
- toilet

Use arm, facial gestures, and sounds

THE TODDLER'S WORLD

Physically present, can be:

- seen
- touched
- manipulated
- heard

Action occurs in the here and now:

- present tense only

LANGUAGE FOR ITS UNIQUELY HUMAN PURPOSE

- For talking about things and ideas that are in their heads

- For expressing ideas that are uniquely theirs

BACKGROUND INFORMATION FOR FACILITATOR

Seminars in
SPEECH AND LANGUAGE

CHILDREN'S PLAY: REFLECTIONS OF SOCIAL COMPETENCE

Carol E. Westby, Ph.D.

INTRODUCTION

If children are to be truly competent in life, they must understand both the physical and social world and be able to communicate this knowledge. A host of psychometric and Piagetian tasks are available to assess aspects of children's knowledge of their physical world, but little is available to evaluate children's knowledge of their social world, that is, their knowledge of people's emotional, motivational, and goal-directed behavior, and how physical objects are used within the social world. How can children's integration of social and physical knowledge and communication of this knowledge be assessed?

Observation of children's play provides a means of evaluating their competence because play is a microcosm of the child's world. In play, children demonstrate their knowledge of the complex spatial-temporal-causal interrelationships among objects, scenes, persons, behaviors, and motives that make up the world of human action, and they experiment with these interrelationships. These interrelationships for familiar events are represented as scripts or schemas that are composed of a sequence of acts organized around goals and that specify actor roles, props, and scene.[1] Play requires and is facilitated by effective communication. Observing the relationships children display and express in play should give us insight into their understanding of the real world.

This article will 1) briefly review the literature on pretend play research, 2) present a framework and developmental scale for observing and evaluating symbolic play and language competence, and 3) discuss the significance of play behaviors for broader social and academic competence.

PLAY RESEARCH

The study of play in normal and handicapped populations has become an in-

BEST COPY AVAILABLE

Language Specialist, Developmental Disabilities Team, University of New Mexico, Albuquerque, New Mexico

Reprint requests: Dr. Westby, Developmental Disabilities Team, University of New Mexico, 2600 Marble NE, Albuquerque, NM 87106

©1988 by Thieme Medical Publishers, Inc., 381 Park Avenue South, New York, NY 10016. All rights reserved.

creasingly popular area of investigation, especially as symbolic play relates to cognitive, social, language, and literacy development.[2-5] Interrelationships between the onset of symbolic play and the onset of language have been well documented.[6-8] A few detailed sequences of symbolic play development are available. Fischer and Corrigan[9] and Wolf, Rygh, and Altshuler[10] have presented developmental sequences of social roles in pretend play; Nicolich[11] identified a sequence of developmental combinations of actions in the pretend play of children under 3 years; and Westby[12] presented a scale that documented changes in children's presymbolic play, symbolic play, and language from 9 months to 5 years.

A number of investigators have compared the play of normal and handicapped children. These studies have focused on the emergence of symbolic play and language in handicapped children and on the nature of play behavior and interaction in handicapped children.[13-15] Regardless of the populations studied (mentally retarded, autistic, language-impaired), the investigations of the play of handicapped children generally reveal similar findings. The data indicate that handicapped children exhibit the same developmental play sequences as normal children, but with some qualitative and quantitative differences. Handicapped children are less likely to initiate play, they more frequently engage in isolated and toy-directed behaviors and less in social-interactive play, they are more dependent on concrete toys for play, yet play with a smaller variety of toys, and they exhibit a greater heterchronous development—skills that usually emerge together do so less frequently in handicapped children and there is greater variability in the skills present at any developmental level.[16-20]

ASSESSMENT OF SYMBOLIC PLAY SKILLS

In 1980, Westby published a Symbolic Play Scale that listed aspects of normal play and language development in 10 stages from 9 months through 5 years of age. As the scale was used more extensively, it became clear that handicapped children (autistic, mentally retarded, attention-deficit disordered, and speech/language handicapped) often exhibited quantitative and qualitative differences in their play compared to normally developing children. Much of the variability or decalage demonstrated by handicapped children in play can be understood by considering separately the components or dimensions of symbolic development embedded in play.[21,22] These components involve 1) decontextualization and object substitution, or the trend for play to occur with decreasing environmental support or changing reliance on props (from realistic, to abstract, to invented), and increasing use of language; 2) integration or organization of play themes, leading to sequentially and hierarchically organized play with greater coherence and complexity of action representation; 3) self-other relationships or decentration that frees symbolic actions from the children's own bodies, allowing them to adopt the roles of others in pretend activities; and 4) thematic content, which refers to the content of the scripts, schemas, or themes that are represented in play. The information in the original scale was reorganized so that examiners could evaluate development of all dimensions within any particular age range and also evaluate development within dimensions across age ranges.

Children's performance in each of the dimensions is considered in an evaluation. The symbolic-play evaluation is conducted in a room that has well-defined play areas including 1) a home area, 2) a store area, 3) a replica play area including Fisher-Price and Playmobile sets, Mattel cars and trucks, and popular action figures such as Star-Wars and Masters-of-the-Universe figures, 4) a block area next to the replica play area, and 5) an area with infant-toddler toys, such as tops, music boxes, and wind-up toys. The child is introduced to all areas of the room and then allowed to go to the area he chooses. A parent is usually encouraged to be in the playroom with the child. If a sibling has come with the child, he or she is also permitted in the playroom.

The examiner makes herself or himself available to the child, but does not initially attempt to direct the child in particular play activities. If the child continues to roam the room, only manipulating objects, the examiner will begin to model simple pretend activities and attempt to engage the child in the pretend. Even with older or more advanced children who initiate the play activities, the examiner will model and attempt to extend various aspects of the play dimensions that the child has not spontaneously displayed. On the scale the examiner marks items that were initiated by the child (I) or that occurred only in response (R) to the examiner's modeling. For each dimension the examiner must ask, "Who initiates the activities?" Does the child initiate the selection of the play props, the themes, the organization of the themes, the social interaction, and the language—or, does the child depend on the partner to lead the play?

THE SYMBOLIC PLAY SCALE

The Symbolic Play Scale is presented in the Appendix. In this section, symbolic-play development will be discussed in terms of the changes that occur in language and in each of the play dimensions at various ages. It should be noted that there are not changes in all dimensions in each stage. Development in the organization dimension replaces earlier stages, whereas development in language and the other play dimensions is generally additive. Earlier behaviors may occur less frequently as more advanced behaviors emerge, but they are not necessarily replaced.

STAGE I: 17 TO 19 MONTHS

At this stage children exhibit the beginning of representational and symbolic pretend play. They are able to find a toy that has been hidden invisibly (as when it is placed in a box and the box is emptied under a scarf) and they exhibit tool-use ability (such as attaining a toy with a stick).

At this stage children do not decontextualize. They require realistic life-size props in order to engage in pretend play. They represent in pretend actions only those highly familiar events, such as eating or sleeping, that they have personally participated in on a daily basis. Their pretend schemas or scripts consist of single behaviors or isolated schemas and the children move quickly from one pretend action to another. For example, the child may pretend to sleep, then abruptly pretend to eat, with no links between these events. They engage in autosymbolic pretend play, that is, they are the agents of the pretend actions. The pretend actions are not extended to other animate or inanimate objects in their environment.

The emergence of tool-use and symbolic play abilities have been closely linked to the emergence of true language.[23] One finds a rapid development of single words that code a variety of semantic relationships. Language serves a variety of communicative functions focusing on the immediate here and now that enable children to meet their needs and desires. Much of the language that accompanies play from 17 months to the 2½-to 3-year level, involves directing of others in the play environment ("Put the baby in the high chair"), maintaining self rights ("Gimme, that's mine, you can't have it"), and labeling on-going action ("Baby's sleeping." "I put baby bed." "Change diaper").

STAGE II: 19 TO 22 MONTHS

In this stage children continue to be dependent upon realistic props to initiate and maintain pretend play and they continue to represent in play only those events that they themselves have directly experienced. Their pretend scripts continue to be brief and isolated from other scripts, but children begin to combine two actions on a doll or two toys for use in the scripts; for example, rocking the doll and then putting it to bed, pouring from a pitcher into a cup or feeding a doll from a plate using a spoon. Children extend the pretend scripts beyond themselves to others in the environment and to dolls. They pretend to feed a parent or another child. A doll functions as a passive recipient of the children's actions. Children comb a doll's hair, feed it a bottle, or put it to bed. Children may speak to a doll, but they do not attribute feelings and actions to the doll at this stage. This beginning elaboration of scripts or schemas results from the child's developing awareness of interrelationships among objects and people. With the emergence of action and object combinations in play appears the emergence of word combinations in language.

STAGE III: 2 YEARS

The primary change in pretend play at age 2 is seen in the organization dimension. The pretend scripts are still isolated, that is, children do not represent a sequence of events, but the individual events or scripts can become highly elaborated. When children pretend to cook and eat or put a doll to bed, they know the many materials that are associated with these activities and will search for and ask for them. Children will set a table, making certain that each person or doll receives a plate, glass, and spoon. The baby doll must sit in a high chair and wear a bib; bigger children sit in standard chairs. In their language they comment on their ongoing behavior using short sentences that may include "ing," plural, and possessive markers.

STAGE IV: 2½ YEARS

The major change at this stage is in the thematic content of the play. Children begin to represent events they experience less frequently. These events have been particularly memorable, either because they are pleasurable or traumatic. With normally developing children, common scripts that emerge are shopping or doctor play. At this time these scripts have only the organization that first appeared at age 2. The child may fill a grocery cart with food, put the doll in the seat, and walk up and down the hall pushing the cart; or the child will use each of the items in a doctor kit on another child or a doll.

Children at this stage can use language selectively to analyze perception. This enables children to give appropriate syntactic and semantic responses to "who, what, whose, where, what . . . do" questions. They are now asking questions generally by placing the "wh" word at the beginning of a sentence, such as "Where the duck is?" They are likely to ask "why" questions, particularly in response to negative statements made by an adult ("Don't touch that" or "You can't have a cookie"), but they do not necessarily listen to the response. With the exception of well-known routines ("Why is the doctor here?" . . . "Baby's sick") children's answers to "why" questions are inappropriate.[24]

STAGE V: 3 YEARS

Three-year-olds continue the pretend themes of the earlier stages; however, they begin to combine isolated scripts into multischeme episodes, for example, setting the table, cooking, serving, and eating a meal, clearing the table, and then washing the dishes. An evolving sequence of scriptal events is present. The children do not plan out the events ahead of time, but as they complete one aspect of the schema or script, they automatically move into the next aspect.

The emergence of evolving sequential scripts signals a cognitive basis for the use of language for reporting (referring to past or earlier events) and predicting (language referring to possible future events) and the associated appearance of use of past-tense and future-aspect markers. This ability to talk about the past and future sets the stage for narrative language. Narrating involves an extended monologue, rather than series of short utterances and interactive language between two parties as occurs in dialogue. This is the beginning of story telling and the emergence of decontextualized language that is associated with literate language skills and later success in reading and writing.

STAGE VI: 3 TO 3½ YEARS

Very quickly after normal children engage in sequences of scripts or schemas, they exhibit growth in decontextualization abilities, thematic content, and knowledge of self-other relationships. Children become less dependent upon realistic, life-size props. They can use miniature props and replica toys such as dollhouses, Fisher-Price, and Playmobile play sets. Fisher-Price figures, which have small round heads glued to colored cylinders, are less realistic than baby dolls that have arms and legs. Children at this stage can engage in object transformations, proclaiming that a chair is a car or that a block is an airplane, a book, or meatloaf. They can use blocks to build structures—fences, houses, barns—whereas earlier they simply stacked blocks to knock them down.

In addition to their representations of events in which they have been personally involved, children now add scripts for events that they may have observed in the community or on television, but in which they were not active participants—for example, policemen and firemen scripts, or slightly later, scripts for He-Man, Batman, Wonder Woman, or other popular movie or television figures. The ability to represent these observed scripts through the use of replica toys in play requires that children project a role onto the replicas. The dolls, figures, and puppets become active other agents, or participants, or partners in the play. The children talk for dolls. Shortly after children begin to talk for the replica toys, they also engage in reciprocal role taking, first talking as a child for the doll, and then talking as a mother to the doll, for example.

Role-taking requires the ability to project into the thoughts and feelings of others and to convey this knowledge through language. Integration of knowledge of past, present, and future events, and other people's actions, thoughts, and feelings permits *reasoning* regarding the interrelationships among these components of the physical and social worlds. In using language for *projective* purposes, children give dialogue and personality to dolls and puppets. This ability to project into the thoughts and actions of others requires the development of a "theory of mind," that is, they must know that thoughts and internal mental states exist and that they are not the same as external acts and events. With this ability to project arises metalinguistic and metacognitive language, such as "He said," "I think," "I forgot," "I know," and "I remember."[25] Metacognitive language is associated with the ability to plan ahead, monitor, self-question, and self-correct. Awareness of the internal mental states of others and the ability to plan and monitor behavior enables children to modify their speech for politeness purposes and for the needs and status of different listeners, simplifying their speech for a younger child and adding politeness and deference features for adults.

A marked growth in descriptive vocabulary occurs as children attend to attributes of objects and characteristics of people in constructing their representations and in substituting or transforming objects for the purposes of the play. These transformations require that children recognize similarities and differences in the real and pretend objects, and the critical attributes of objects in order to substitute one for another or to "construct" an object or setting through words alone.

STAGE VII: 3½ TO 4 YEARS

Changes in this stage involve increasing decontextualization and elaboration of the thematic content, organization, and self-other relationships that emerged between 3 and 3½ years. By 3½ years, children are able to use gestures and language to set the scene. For example, one 3-year-old waiting in a doctor's office, put her stuffed dog on a chair near her, climbed on another chair, reached forward as though to turn a key, and then pretended to drive a car. She stopped driving, then commented to her brother, "Tony, we're watching a movie. It's a movie about a kitty." Her autistic 4-year-old brother looked at the stuffed dog and replied, "That's a doggie," to which his sister responded, "I know, Tony. I know it's a doggie, but pretend it's a kitty."

The sequence of pretend events in this stage does not simply evolve, but rather it is planned. Children are able to hypothesize about future events and problem-solve actions that they have not experienced or observed. Play may be well planned in advance and the planning may take as long or longer than the actual pretend play. For example, several children planned a pretend birthday party. They assigned different children roles (mother, father, baby, boy who was having the birthday, teacher, friend), "wrote" invitations to the party, decorated the room, planned what gifts to buy, and then proceeded to play through the preparations and the party itself.

The self-other relationships becomes more elaborated in this stage. Children begin to recognize that any individual may function in more than one role. For example, a woman may be a wife, a mother, and a business executive; a man may be a husband, a father, a doctor, an uncle. Each of these roles requires different language and interaction patterns used in different contexts. Dolls and replica figures become more than partners in children's play. They now come to life. Children use dolls and replica figures to act out entire scripts. They are able to be the voices of several characters, having the characters interact with each other (and not with the child who is managing them), and to assume multiple roles for each character.

By this age children can smoothly switch their own roles during play. They can take the role of a character ("I'm cooking spaghetti for your lunch."), act as a stage manager for the props ("There's not enough fire hose. Can you get some string?"), and speak as the author of the play story ("Now the mother squirrel decided to have a birthday party for her little boy.").

Children who can plan such events will generally verbalize their intentions about future events, predictions, and hypotheses by using modals such as "can," "may," "might," "would," "could," and "will," and conjunctions such as "and," "but," "so," and "because." This is in accord with reports that children begin to reason about perception and use hypothetical statements at 4 years of age.[24] This is only the beginning use of such modals and conjunctions and does not indicate that the child has full competence of these linguistic forms.

STAGE VIII: 5 YEARS

Changes at this level are primarily in thematic content and organization dimensions. The themes expand to include events in which the children themselves have neither participated nor observed. Children are able to integrate information from their own experiences and observations in novel ways with knowledge of the physical and social world to develop elaborate themes about astronauts, pirates, scientists, or friendly monsters. For example, 6-year-old Daryl arranged a set of Playmobile cowboys and Indians around a wagon and campfire. On the periphery of this arrangement he placed the Star-Wars robots, R2D2 and C3PO. He then flew in Luke Skywalker's X-wing fighter ship and announced, "Boy, will those cowboys and Indians be surprised when they met C3PO and R2D2," and proceeded to act out a conflict of cultures. Although he had seen numerous cowboy movies and had seen Star Wars several times, he had never seen what might happen if cowboys encountered Star-Wars characters.

By age 5 children can not only plan out their own behavior in play, but can also plan and monitor the roles and behaviors of others. This is most frequently seen in the more competent children in kindergarten classes who announce the play theme, everyone's role in the play, and precisely what each child is to say and do, and when and where they are to say and do it.

In order to coordinate such a complex scenario, children must have command of a variety of complex semantic and syntactic structures that enable them to coordinate and subordinate events. They must be able to indicate which events are to occur simultaneously by using the conjunction "and"; they must be able to indicate temporal relationships among events by using relational terms such as "then," "when," "first," "next," "while," "before," and "after"; they must be able to indicate clearly who is to perform the activities and how they are to be performed by using explicit descriptions requiring elaborated noun phrases or relative clauses.

SIGNIFICANCE AND INTERPRETATION

Over the years a variety of theories have been presented for the significance of play. It has been proposed that play serves only as a release of excess energy, that it serves as relaxation from work, or that it serves as practice for future needed skills. More recently, play has been viewed as a means for social-cognitive development and a reflection of that development. This article espouses this latter view of the function of play. Specific contributions of various dimensions of play have been made in current play-research literature.

DECONTEXTUALIZATION

Play has been linked with the ability to use a decontextualized style of language. Reading and writing usually require the use of language without the assistance of concrete contextual support from the environment. Pelligrini[26,27] reported that children's play was a powerful predictor of writing achievement in kindergarten and that children who exhibited greater decontextualization in their play, used more explicit language involving endophoric reference (i.e., linguistic coding of referents rather than pointing and gesturing), elaborated noun phrases (e.g., "Here's another baby. She's the good baby."), use of temporal and causal conjunctions, and past-tense and future-tense verbs.

Inability to use decontextualized language has been associated with lack of academic success in school.[28] Learning-disabled students often exhibit deficits in the ability to decontextualize. This deficit was reflected in a middle school (grades 6–8) language-learning-disabilities classroom where students were playing with Legos and Playmobile and Star-Wars characters. Among themselves, the students had agreed to play Santa Fe prison riot (a violent event that had recently occurred and that had commanded considerable media attention). One student began to worry because they had no way to escape. Another student suggested that he would build a car out of Legos and this could be used as the escape vehicle. The other student rejected this idea saying, "It won't look like a car."

THEMATIC CONTENT

In play children both display and further their scriptal knowledge. Having scripts or schemas for situations provides us with a sense of security. Scriptal knowledge enables us to know what is coming, how to behave, and what to say. Without this knowledge, the world is a frightening, unpredictable place. The behavior difficulties exhibited by many learning-handicapped children may be related to their fear of the unknown and to the limited options they have for coping. The relationship between limited schema knowledge and emotional coping is exemplified by the following example: Anthony, an 8-year-old, language-disordered child, was enrolled in a program that provided frequent structured pretend play experiences. As part of a unit on health, a pediatrician visited the program. The teacher read the children books about doctors, such as *It's Your Turn Doctor*, a story in which the child performs the examination on the doctor and for several weeks the children played various doctor-related themes. When Anthony's grandmother came for conference day, the teacher asked what significant changes she had noticed in Anthony. She responded that she was particularly pleased about changes in Anthony's behavior when she took him places, and most specifically when she had taken him to the doctor recently. She reported that in the past she had always had to carry a screaming, kicking Anthony into the doctor's office. On this visit, Anthony walked into the doctor's office himself, sat down, tolerated the examination, and then announced, "It's your turn, Doctor."

ORGANIZATION

The development of increasing organization or integration in the play appears to reflect not only increasing understanding of the spacial, temporal, and cause-effect relationships within the physical and social world, but also increasing metacognitive skills that enable children to monitor their own behavior. Deficits in the organizational dimension of play may represent lack of understanding of the interrelationships within the physical and social world, or deficits in the child's metacognitive abilities. Language is critical for the development of metacognitive, self-control, and monitoring behaviors, for it is largely through language that the individual plans his behavior.

Learning-disabled students diagnosed as attention deficit disorder (ADD) exhibit significant difficulty in the organization dimension of play.[29] Patterson[30] compared the play of three 7-year-old boys matched for IQ—a normal 7-year-old boy and two attention deficit boys, one on medication and one not on medication. The ADD boys spent a considerable amount of their time in the play room looking around and manipulating toys, but not engaging in pretend play. The ADD child on medication spent more time with each material than did the ADD child not on medication, but he did not organize his play any better than the child not on medication. The ADD boys were less likely than the normal child to initiate a pretend theme. They readily joined the normal child in pretend, but often did not appear to be able to follow his suggestions for elaboration and sequencing of events. Instead, they would replay the same aspect of an event over and over, such as a fire truck rushing to a house, but they did not pursue the theme of putting out the fire, rescuing people from the burning house, and calling an ambulance (activities suggested by the non-ADD boy).

The ability to organize play at advancing levels would appear to be highly dependent upon a child's ability to reflect on past experiences, predict future experiences, and reason about relationships between past and future relationships. Language has a significant role in the mediation of these reflections.

SELF-OTHER RELATIONS

The distinction between self and others is critical to the development of emotional experience and the understanding that emotional experience underlies all behavior of animate beings. This distinction is the basis for all social cognition. This developing awareness of one's own emotionality and the emotionality of others underlies communicative competence. Dore[31] proposed that the subsystems of communicative competence include *feelings* between participants that motivate utterance *forms* used to effect various intentional and sequential *functions* relative to the contextual *frames* in which they occur.

Because written narratives are reports of character behaviors, it is imperative that readers recognize the feelings, intentions, and plans of characters.[32] Poor readers may exhibit a deficit in ability to take the roles of characters in stories. Westby, Van Dongen, and Maggart[33] explored oral and literate language skills in high-average and low-average fourth-grade readers. In one of the assessment tasks students played together in dyads. The high-average readers were more likely to pretend that people were driving the battery-powered vehicles and they imputed goals to the characters, such as taking over a mine, winning a race, or capturing space invaders. The low-average readers were more likely to line up the vehicles, turn them on, and watch to see which was the first to reach the other end of the room. The low-average readers exhibited significantly less mature play behavior, focusing on actions rather than role behaviors.

This distinction between self and others is seen in children's abilities to carry on multiple discourse roles in play, for example, the roles of character, stage manager, and narrator. Wolf[24] noted that these three types of discourse are encountered in reading a story. One reads the words of the characters, description of the thoughts and actions in the story, and perhaps the narrator's reflection about the story.

SUMMARY

Increasingly, children's uses of language or pragmatic skills are being assessed in natural home and classroom settings as well as in formal tests. Such evaluations generally code the types and frequency of the language functions and the appropriateness or inappropriateness of the language in the social context. Pragmatic language assessments have frequently failed to explain the bases for children's pragmatic deficits. Therapeutic attempts are made to teach specific language functions (e.g., greeting, requesting, reporting feelings, etc.) without exploring more broadly the children's understanding of their physical and social world. Such therapeutic approaches may provide the children with a specific script to say in a specific situation, but if children are not assisted in developing their understanding of physical and social cause-effect relationships, they will not be able to modify this script for different people and situations. Observations of children's play can provide the examiner with information regarding children's social knowledge. Social knowledge is critical for appropriate interactions with others and for comprehension of social interactions in stories. Observation of play also permits the examiner to evaluate children's ability to integrate knowledge from a variety of sources, rather than focusing on knowledge of isolated specific facts. Although knowing specific facts is important, it has limited usefulness if the information cannot be integrated in such a way as to enable the individual to function appropriately within the world.

REFERENCES

1. Nelson, K., and Seidman, S. (1984). Playing with scripts. In I. Bretherton (Ed.), *Symbolic play: The development of social understanding* (pp. 45–71). New York: Academic Press.
2. Bretherton, I. (1984). Representing the social world in symbolic play: Reality and fantasy. In I. Bretherton (Ed.), *Symbolic play: The development of social understanding* (pp. 3–41). New York: Academic Press.
3. Galda, L., and Pelligrini, A. (1985). *Play language and stories.* Norwood, NJ: Ablex.
4. Garwood, S. G. (Ed.). (1982). Play and development. *Topics in Early Childhood Special Education, 2:3.*
5. Yawkey, T. D., and Pelligrini, A. (Eds.). (1984). *Child's play: Developmental and applied.* Hillsdale, NJ: Erlbaum.
6. Bates, E., Benigni, L., Bretherton, I., Camaioni, L., and Volterra, V. (1979). *The emergence of symbols: Cognition and communication in infancy.* New York: Academic Press.
7. Nicolich, L. (1977). Beyond sensorimotor intelligence: Assessment of symbolic maturity through analysis of pretend play. *Merrill-Palmer Quarterly, 23*:2, 89–99.
8. Wing, L., Gould, J., Yeates, S. R., and Brierly, L. M. (1977). Symbolic play in severely mentally retarded and autistic children. *Journal of Child Psychology and Psychiatry, 18*, 167–178.
9. Fischer, K. W., and Corrigan, R. (1980). A skill approach to language development. In A. P. Reilly (Ed.), *The communication game* (pp. 58–64). Skillman, NJ: Johnson and Johnson.
10. Wolf, D., Rygh, J., and Altshuler, J. (1984). Agency and experience: Actions and states

in play narratives. In I. Bretherton (Ed.), *Symbolic play: The development of social understanding* (pp. 195–217). New York: Academic Press.

11. Nicolich, L. (1977). Beyond sensorimotor intelligence: Assessment of symbolic maturity through analysis of pretend play. *Merrill-Palmer Quarterly, 23*:2, 89–99.
12. Westby, C. E. (1980). Assessment of cognitive and language abilities through play. *Language Speech and Hearing Services in Schools, 11*, 154–168.
13. Casby, M., and Ruder, K. (1983). Symbolic play and early language development in normal and mentally-retarded children. *Journal of Speech and Hearing Research, 26*, 404–411.
14. Hill, P. M., and McCune-Nicolich, L. (1981). Pretend play and patterns of cognition in Down's syndrome children. *Child Development, 52*, 611–617.
15. Terrel, B., Schartz, R., Prelock, P., and Messick, C. (1984). Symbolic play in normal and language-impaired children. *Journal of Speech and Hearing Research, 27*, 424–429.
16. Brooks-Gunn, J., and Lewis, M. (1982). Development of play behavior in normal and handicapped infants. *Topics in Early Childhood Special Education, 2*:3, 14–27.
17. Field, T., Roseman, S., De Stefano, L., and Koewler, J. (1982). The play of handicapped children with handicapped and nonhandicapped children in integrated and nonintegrated situations. *Topics in Early Childhood Special Education, 2*:3, 28–38.
18. Hill, P. M., and McCune-Nicolich, L. (1981). Pretend play and patterns of cognition in Down's syndrome children. *Child Development, 52*, 611–617.
19. Johnson, J. E., and Ershler, J. L. (1985) Social and cognitive play forms and toy use by nonhandicapped preschoolers. *Topics in Early Childhood Special Education, 5*:3, 69–82.
20. Motti, F., Cicchetti, D., and Sroufe, L. A. (1983). From infant affect expression to symbolic play: The coherence of development in Down Syndrome Children. *Child Development, 54*, 1168–1175.
21. Bretherton, I. (1984). Representing the social world in symbolic play: Reality and fantasy. In I. Bretherton (Ed.), *Symbolic play: The development of social understanding* (pp. 3–41). New York: Academic Press.
22. Rubin, K. H., Fein, G. G., and Vandenberg, B. (1983). In P. H. Mussen (Ed.), *Handbook of child psychology* (Vol. IV) (pp. 693–774). New York: Wiley.
23. Bates, E., Benigni, L., Bretherton, I., Camaioni, L., and Volterra, V. (1979). *The emergence of symbols: Cognition and communication in infancy*. New York: Academic Press.
24. Blank, M., Rose, S. A., and Berlin, L. J. (1978). *The language of learning: The preschool years*. New York: Grune & Stratton.
25. Wellman, H. (1985). The origins of metacognition. In D. L. Forrest-Pressley, G. E. MacKinnon, and T. G. Waller (Eds.), *Metacognition, cognition, and human performance* (Vol. 2.) (pp. 1–31). New York: Academic Press.
26. Pelligrini, A. D. (1984). Symbolic functioning and children's early writing: The relations between kindergarteners' play and isolated word-writing fluency. In R. Beach and L. Bridwell (Eds.), *New directions in composition research* (pp. 274–284). New York: Guilford Press.
27. Pelligrini, A. D. (1985). Relations between preschool children's symbolic play and literate behavior. In L. Galda and A. D. Pelligrini (Eds.), *Play, language and stories* (pp. 79–97). Norwood, NJ: Ablex.
28. Michaels, S., and Collins, J. (1984). Oral discourse styles: Classroom interaction and acquisition of literacy. In D. Tannen (Ed.), *Coherence in spoken and written discourse* (pp. 219–244). Norwood, NJ: Ablex.
29. Miller, P. H. (1985). Metacognition and attention. In D. L. Forrest-Pressley, G. E. MacKinnon, and T. G. Waller (Eds.), *Metacognition, cognition, and human performance* (Vol. 2.) (pp. 181–221). New York: Academic Press.
30. Patterson, J. (1981). Characteristics of play activities in two hyperactive children. Unpublished paper. University of New Mexico.
31. Dore, J. (1986). The development of conversational competence. In R. L. Schiefelbusch (Ed.), *Language competence: Assessment and intervention* (pp. 3–60). San Diego: College-Hill.
32. Bruce, B. C. (1980). Plans and social action. In R. J. Spiro, B. C. Bruce, and W. F. Brewer (Eds.), *Theoretical issues in reading comprehension* (pp. 367–384). Hillsdale, NJ: Erlbaum.
33. Westby, C. E., Van Dongen, R., and Magart, Z. (1986). The concept of trickery: Its development and role in culture and reading. Presented at the International Reading Association, Philadelphia, PA.
34. Wolf, D. (1986). "I'm the pirate," he said. Symbolic play as a context for learning the types of discourse. Presented at the International Reading Association Convention, Philadelphia, PA.

BEST COPY AVAILABLE

Appendix. Symbolic Play Scale

Decontextualization What props are used in pretend play?	***Thematic Content*** What schemas/scripts does the child represent?	***Organization*** How coherent and logical are the child's schemas/scripts?	***Self/Other Relations*** What roles does child take and give to toys and other people?	***Language***	
				Function	***Forms and Meaning***
Stage I: 17 to 19 months					
Tool-use (uses stick to reach toy) Finds toy invisibly hidden (when place in box and box emptied under scarf) Uses common objects and toys appropriately in real and pretend activities; requires life-like props to pretend	Familiar, everyday activities (eating, sleeping) in which child has been active participant	Short, isolated schemas (single pretend action)	Self as agent (autosymbolic or self-representational play, i.e, child pretends to go to sleep, to eat from spoon, or to drink from cup)	Directing Requesting Commanding Interactional Self-maintaining Protesting Protecting self and self-interests Commenting Labeling (object or activity) Indicating personal feeling	Beginning of true verbal communication. Words have following functional and semantic relations: Recurrence Existence Nonexistence Rejection Denial Agent Object Action or State Location Object or person associated with object or person
Stage II: 19 to 22 months					
		Short, isolated schema combinations (child combines two actions or toys in pretend, e.g., rocking doll and putting it to bed, pouring from pitcher into cup, or feeding doll from plate with spoon)	Child acts on doll (doll is passive recipient of action): brushes doll's hair, feeds doll, covers doll with blanket Child performs pretend actions on more than one object or person, e.g., feeds self, a doll, mother, and another child	Refers to objects and persons not present	Beginning of word combinations with following semantic relations: Agent-action Action-object Agent object Attributive Dative Action-locative Object-locative Possessive
Stage III: 2 years					
		Elaborated single schemas (represents daily experiences with details, e.g., puts lid on pan, puts pan on stove, turns on stove; or collects items associated with cooking/eating such as dishes, pans, silverware, glasses, highchair)			Uses phrases and short sentences Appearance of morphological markers Present progressive (ing) on verbs Plurals Possessives

BEST COPY AVAILABLE

Appendix. (Continued)

Decontextualization What props are used in pretend play?	***Thematic Content*** What schemas/scripts does the child represent?	***Organization*** How coherent and logical are the child's schemas/scripts?	***Self/Other Relations*** What roles does child take and give to toys and other people?	***Language***	
				Function	***Forms and Meaning***
Stage IV: 2½ years	Less frequently personally experienced events, particularly those that are memorable because they are pleasurable or traumatic Store shopping Doctor-nurse-sick child				Responds appropriately to the following WH questions in context: What Who Whose Where What . . . do Asks WH questions (generally puts WH at beginning of sentence) Responses to why questions inappropriate except for well-known routines Asks why, but often inappropriate and does not attend to answer
Stage V: 3 years	Re-enactment of experienced events, but modifies original outcome	Evolving schema sequences, e.g., child mixes cake, bakes it, serves it, washes dishes; or doctor checks patient, calls ambulance; takes patient to hospital (sequence is not planned)		Reporting Predicting Narrating or story-telling	Uses past tense, such as, "I ate the cake", "I walked" Uses future aspect (particularly "gonna") forms, such as, "I'm gonna wash dishes."

Stage VI: 3 to 3½ years					
Carries out pretend activities with replica toys (Fisher-Price/Playmobile doll house, barn, garage, airport, village) Uses one object to represent another (stick can be a comb, chair can be a car). Uses blocks and sandbox for imaginative play. Blocks used as enclosures (fences, houses) for animals and dolls	Observed events, i.e., events in which child was not an active participant (policemen, firemen, schemas/scripts from familiar TV shows—Superman, Wonder Woman)		Uses doll or puppet as participant in play Child talks for doll Recipirical role taking—child talks for doll and as parent to doll	Projecting: Gives desires; thoughts, feelings to doll or puppet Uses indirect requests, e.g., "mommy lets me have cookies for breakfast." Changes speech depending on listener Reasoning (integrates reporting, predicting, projecting information)	Descriptive vocabulary expands as child becomes more aware of perceptual attributes Uses terms for following concepts (not always correctly): shapes sizes colors textures spatial relations Uses metalinguistic and metacognitive language, e.g., "He said . . .," I know . . ."
Stage VII: 3½ to 4 years					
Uses language to invent props and set scene Builds 3-dimensional structures with blocks		Schemas/scripts are planned Child hypothesizes, "What would happen if . . . "	Uses dolls and puppets to act out schemas/scripts Child or doll has multi-roles (e.g., mother and wife; fireman, husband, and father)	Uses language to take roles of character in the play, stage manager for the props, or as author of the play story	Uses modals (can, may, might, will, would, could) Uses conjunctions (and, but, so, if, because) Note: Full competence for modals and conjunctions does not develop until 10-12 years of age. Begins to respond appropriately to why and how questions which require reasoning
Stage VIII: 5 years					
Can use language totally to set the scene, actions, and roles in the play	Highly imaginative activities that integrate parts of known schemas/scripts and develop new novel schemas/scripts for events child has never participated in or observed (e.g., astronaut builds ship, flies to strange planet, explores, eats unusual foods, talks with creatures on planet)	Plans several sequences of pretend events. Organizes what is needed—both objects and other children. Coordinates several scripts occurring simultaneously			Uses relational terms (then, when, first, next, last, while, before, after) Note: Full competence does not develop until 10-12 years of age

ARTICLE ONE

SELF-ASSESSMENT QUESTIONS

1. Metacognition refers to:
    - (a) talking about language structure
    - (b) talking about emotions
    - (c) communication about communication
    - (d) nonverbal communication
2. A 26-month-old child should be able to:
    - (a) act on a doll in pretend play
    - (b) report past experiences
    - (c) plan sequences of pretend play
    - (d) play without props
3. In play, handicapped children:
    - (a) prefer play without props
    - (b) engage primarily in social-interactive play
    - (c) exhibit synchrony in development of various play dimensions
    - (d) initiate pretend play themes less frequently than normal children
4. What is the relationship between language and symbolic play?
    - (a) symbolic play causes language development
    - (b) symbolic play is necessary and sufficient for the development of language
    - (c) symbolic play is necessary but not sufficient for the development of language
    - (d) symbolic play is not necessary for the development of language
5. The ability to use decontextualized play is most directly related to:
    - (a) literacy success in school
    - (b) the ability to project into the thoughts of others
    - (c) a good attention span
    - (d) emotional adjustment

REFERENCES FOR COMMUNICATION

Caplan, F. (1973). The first twelve months of life: your baby's growth month by month. New York, NY: Grosset and Dunlap.

Castle, K. (1983). The infant & toddler handbook: invitation for optimun early development; Atlanta, GA: Humanics Limited.

Connolly, K. and Bruner, J. (1974). The growth of competence; New York, NY: Academic Press.

Greenspan, S.I. and Greenspan, N.T. (1985). First feelings; New York, NY: Penguin Books.

Greenspan, S.I. and Pollock, G.H. (Eds) (1989). The course of life, vol. I: infancy; Madison, CT: International Universities Press, Inc.

Kagan, J. Kearsley, R.B., and Zelazo, P.R. (1978). Infancy: its place in human development; Cambridge, MA: Harvard University Press.

Leach, P. (1983). Your baby & child from birth to age five; New York, NY: Alfred A. Knopf.

Miller, K. (1984). Things to do with toddlers and twos; Telshare Publishing Co.; 1984.

Osofsky, J.D. (Ed.) (1973). Handbook of infant development; New York, NY: John Wiley & Sons.

Stern, D.N. (1985). The interpersonal world of the infant; New York, NY: Basic Books, Inc., Publishers.

SUPPLEMENTAL MATERIALS

DEFINITIONS OF TERMS ASSOCIATED WITH SPEECH/LANGUAGE

APHASIA: the weakening or loss of the ability to understand or to express ideas with language. It is a symbolic disorder, caused by brain damage, not the result of motor problems.

ARTICULATION DISORDERS: disorders that are associated with faulty production of the speech sounds, or incorrect use of the sounds in words.

AUDITORY ASSOCIATION: the ability to draw relationships or make associations from what is heard to what is seen or can be said.

AUDITORY CLOSURE: the ability to identify a word from an incomplete word presented orally.

AUDITORY DISCRIMINATION: the ability of an individual to determine whether two sounds are the same or different.

AUDITORY FIGURE GROUND: the ability to distinguish sound in the foreground from sounds in the background.

AUDITORY MEMORY: the ability to recognize and/or recall stimuli presented orally; demonstrated by being able to follow reasonable directions.

AUDITORY PROCESSING: the ability of an individual to understand and organize verbal input.

BABBLING: deliberate, vocalizational play, experimentation with sounds by infants which begins about 4 months of age.

COGNITION: the process or act of "knowing". Perception, memory, conceptualization, and problem solving are all involved in cognition. Theorists disagree about the relationship between language learning and cognitive development. Language is a prerequisite to efficient communication of what one is cognizant of (knows) to others.

COMMUNICATION: a process that includes: the expression of an idea; its transmission or conveyance to another person or group; its comprehension by the receiver(s) of the message; and the social and psychological impact of the exchange of ideas.

COMMUNICATION DISORDERS: any interference with an individual's ability to comprehend or express ideas, experiences, knowledge, and feelings.

COMPREHENSION: the ability of an individual to understand and give appropriate meaning to what he or she hears.

CONCEPT: an expression of a rule that organizes the stimuli in one's experiences (Siegel, 1975). Verbal concepts or symbolic labels enable individuals to classify and retrieve information.

CONVERSATION: a shared focus of attention involving turn taking and topic maintenance. May be verbal interaction or activity interaction.

EXPRESSIVE LANGUAGE ABILITY: the ability to send a communication according to a system of rules and in a manner that can be understood by others who know the rules.

GRAMMAR: the linguistic rules that make it possible for those who share a knowledge of those rules to communicate. A finite set of rules in each language makes it possible to understand as well as to create an infinite number of utterances.

JARGON: speech containing little or no transmission of information. May or may not be recognizable words.

LANGUAGE: "A language is a code whereby ideas about the world are represented through a conventional system of arbitrary signals for communication" (Bloom and Lahey, 1978).

PHONEME: a single speech sound that functions analogously in a language, for example, [s].

PRAGMATICS: the rules underlying the functional use of language.

RECEPTIVE LANGUAGE: translation of sounds and words into their intended meanings.

SEMANTICS: the branch of linguistics concerned with the meanings of words or groups of words.

SPEECH: a vehicle for expressing language using vocal symbols involving motor activity of verbal expression.

SYNTAX: the order or arrangement of words in an utterance. In a simple affirmative declarative sentence the subject comes first and the verb follows.

SYMBOLIC PLAY: behavior representative of cognitive abilities involving pretend play and abstract thought.

VOCAL DISORDERS: those associated with faulty pitch, loudness, or quality or with the absence of vocalization.

VOCAL NODULES: callouses or growths on the vocal folds that prevent the vocal folds from approximating one another.

VOCAL PLAY: in the development of speech, the stage during which children experiment with sounds and syllables.

TEMPERAMENT

What You Need:

HANDOUTS:

Temperament Inventory
What We Know About Temperament
Behavioral Dimensions of Temperament
Descriptors of Role Play: Adult Role
Child Role

OVERHEADS:

Scoring Key
What We Know About Temperament
Behavioral Dimensions of Temperament
Look For
Questions on Temperament Problem
Questions for Temperament Problem

EQUIPMENT & MATERIALS:

Overhead Projector
Screen
VCR
TV Monitor
Flipchart and Markers
Video of PBS Tape "First Feelings" from NOVA Series, Excerpt on "Temperament" with Dr. Kagan, et. al.
Props for Role Play: Toys, Stuffed Animal, Coats, Purse, Books for Children, etc.

BACKGROUND INFORMATION FOR FACILITATOR:

References for Temperament
Behavioral Dimensions of Temperament -- Other Perspectives
Points of Disagreement

TEMPERAMENT

RATIONALE: While development occurs in a fairly predictable manner, each child appears to be born with a combination of unique individual characteristics which are called **temperament style**. These traits influence the way the child learns, interacts with others and copes with daily challenges. Recognizing the child's individual temperament style enables parents and professionals to create an environment that is more supportive of the child's development. When the child feels congruent with his world, his self-esteem and development are enhanced.

GOALS: To help parents and professionals develop an awareness of the individual child's temperament style, and how it may influence his overall development. To help parents and professionals learn ways they can match the child's temperament style in order to support his growth and development.

MINI-LECTURE: We have explored the normal developmental sequences of the sensorimotor and communication systems. Children develop in predictable ways. However, as parents, teachers and caregivers, we know that each child also matures in a unique way. They learn skills at different rates, and have varied interests, strengths and weaknesses. So we ask ourselves why do children behave differently from each other?

We also find that we identify children by certain characteristics that tell us about the "personality" of the child. We say "You know, from birth he was always active, a real go-getter. . . . She is really persistent. If she is really interested in some-thing, I can't take her away from it without a fight. . . . He is so fearful about anything that is different or new."

During this session, we want to examine these differences by exploring temperament, and how it may support or alter the child's developmental progress. Temperament is a combination of characteristics that underlie the individual's behavior.

Remember, during the first session, we viewed a group of preschool children interacting with their teacher in the classroom. What can we say about their temperament, or personality, style? As we discuss temperament, think about the individual personalities of those children.

Understanding the child's individual temperament style can help explain why children behave differently -- for example, why some children manage change fairly easily and others find every transition a struggle. The behavioral differences among children affect how each child will master developmental tasks. With this knowledge, parents and teachers can establish a relationship with the child that will be more supportive of his development, and enhance his self-esteem. This knowledge will lead parents and teachers learning how to adjust their temperament styles to better match the child's style, and to set realistic expectations for the child is learning and socialization experiences.

OBJECTIVE 1

To provide participants with an awareness of the characteristics of temperament.

MINI-LECTURE: One way to understand the characteristics of temperament is to begin to identify our own TEMPERAMENT STYLE. Temperamental style describes a set of behavioral dimensions which we will define in more detail later in the workshop. Everyone will now fill out a TEMPERAMENT INVENTORY. This inventory was adapted by Project Ta-kos from the "Strelau Temperament Inventory" as a tool for this self-awareness activity.

ACTIVITY: Facilitator gives **handout** "Temperament Inventory".

Direct audience to read through questions and note YES/NO columns on left side of paper.

Ask audience to check YES, in that column, or NO, in that column, as they agree or disagree with each question and stop after question 28. {Allow 15 minutes for participants to complete inventory.} When they are finished, begin DISCUSSION.

DISCUSSION: Tell participants, "These next questions are designed to help you describe some of your temperamental traits."

Facilitator should help participants focus on developing appropriate descriptions of temperament styles that are non-biased/non-judgmental. Facilitator may want to use blackboard or flip chart to record these descriptions that would serve as a useful visual in a later discussion. Examples of descriptions could include phrases such as "excitable", "energetic", "more calm", "focussed", and so on. Facilitator may need to give some examples of descriptors if participants initially are unable to come up with their own.

SCORING: **Before scoring, facilitator asks:**

"What was it like filling out this inventory?"

"Do you know what kinds of traits or behaviors are being described here?"

"Now let's score the inventory and see how accurate you are in describing your temperamental style."

Facilitator will share scoring with participants by asking them to refer to page 2 and the section labeled "Categories".

OVERHEAD: Display **overhead** "Scoring Key".

SCORING KEY

Category	Questions	Yes/No
Adaptability -	3, 4, 13, 17	______
Persistence/Attention -	8, 10, 12, 16, 20	______
Distractibility -	14, 22, 23	______
Regularity -	15, 18, 24, 28	______
Activity -	2, 19, 25, 26	______
Approach/Withdrawl -	1, 6, 11, 27	______
Intensity -	5, 7, 9, 21	______

Participants will count the number of checks in each column for each category. For example, questions 3, 4, 13, and 17 belong in category ADAPTABILITY. Count up the number of **yes** responses and put that number in the **yes** column. Do the same for the **no** column.

DISCUSSION: Tell participants: These characteristics suggest that you have a tendency to behave in a certain way. These are considered dimensions of behaviors not personality labels.

If they have more marks under the "yes" column, they have more of a tendency toward that characteristic. If they have more marks under the "no" column, then they have less of a tendency toward that characteristic. Such as "more adaptable" or "less adaptable".

EXAMPLE: You may have more yeses in the REGULARITY category. So one could say that you tend to "like routine," but not "label" you as "being rigid."

Facilitator Note: When scoring category APPROACH/WITHDRAWAL, yes refers to approach behavior, and no refers to withdrawal behavior.

"How would you describe yourself now that you have scored the inventory?"

"What desriptions fit you?"

"How is this perspective of you different from what you imagined about yourself before this activity?"

"Is this how others have described you? (family, friends, coworkers)"

"What did you learn about yourself as a result of this inventory?"

Facilitator Note: This activity provides a frame of reference for discussions of temperament. Participants become aware of their behavioral traits which make up the individual's temperament style and learn to describe them in a nonjudgemental manner.

MINI-LECTURE: This activity has made us aware of the differences in the individual's behavioral response to a given situation. This grouping of behavioral character-istics is called TEMPERAMENT STYLE.

OBJECTIVE 2

To develop an awareness of the qualities of temperament.

ACTIVITY: Facilitator shows video "First Feelings", excerpt on "Temperament" with Kagan, et. al. Sequence is about 5 minutes.

Facilitator introduces the excerpt from the video, "First Feelings", a PBS Nova program that explores emotional development in infants and children. Explain to participants that this sequence focuses on the temperament styles of three young children. Dr. Kagan and his associates discuss some of the qualities of temperament.

DISCUSSION: "This video tape sequence helps us become familiar with some of the descriptors and qualities of temperament.

Ask participants:

"What were thw two traits that Dr. Kagan described?"

"What were some of the qualities he listed as descriptive of temperament?"

"How does this information fit with what you know about temperament?"

Answers may include: shy, bold traits; that temperament is innate, environment may incluence temperament traits, etc.

Let's now look more closely at the characteristics of temperament.

OVERHEAD AND HANDOUT: Facilitator shows **overhead** of **"What We Know About Temperament"** and gives **handout** of same. Show each "point" on the overhead as it is described. Start with number "2". The behavioral dimensions will be presented last with the small group activity.

MINI-LECTURE: We want to review some of the qualities of temperament that have been identified by those who are studying it. Refer to "What Theorists Agree Upon . . ." in handout.

Kagan also told us that temperament characteristics are innate. What is not known is the exact biological mechanism that shapes temperament and therefore helps to produce such a wide range of responses. Theorists are not clear if certain temperament traits are inherited (genetics) or a result of overall biological structure of the individual. (i.e., That all babies have the capacity to smile.) However, temperament observed in infancy seems to be "pure expression" of temperament style, because an infant has fewer environmental influences to modify it. Some traits that have been identified early touch or changes and attentiveness.

POINT: Some temperament traits have a biological basis. Temperament characteristics appear during infancy and are expressed more directly at this stage.

EXAMPLE: Think about and infant you may know who protests every change/transition in contrast to the infant who can stay awake at different times, does not mind being held by new people or tolerates a wet diaper. These children , from birth, demonstrate a difference in their adaptability to change, and how they handle input from their environment.

As we just described, we are aware of "personality" differences between children even from birth. Temperament styles seems to explain why individuals respond differently to similar situations or experiences. Each person is comprised of a different combination of temperament traits. For example, all babies will smile, but in different ways, for varied amounts of time and for different reasons.

POINT: Temperament refers to individual differences, not universal patterns of development.

The stability of temperament style means that the individual combination of behavioral characteristics and the individual differences that make up a temperament style is consistent over time. People who are shy, will always feel shy but often learn ways to modify this behavior to help them feel less timid.

POINT: Temperament is relatively stable over time, but expression of temperamental characteristics can be influenced by environment, parenting styles, peers, body state, motivation, experience, etc.

EXAMPLE: A shy child who finds it difficult to manage new experiences can be taken to school ahead of time to get to know the teacher and physical surroundings. This enables the child to have an easier time transitioning to the classroom because she is now familiar with the teacher and the environment, and therefore more confident.

When looking at activity level, instead of labeling a child as being lazy, we say that a child displays lethargy and not much energetic behavior. The behavior is described by the intensity, frequency, and duration of how the child engages in that behavior. In the video, Kagan talked about the **tendency** toward shyness or boldness. The behavior is described on a continuum and is not explained as a label. These are nonjudgmental descriptions to help us become more aware of the temperament of each individual.

POINT: Temperament reflects dimensions of behavior, not behavioral acts.

OVERHEAD AND HANDOUT: Facilitator shows **overhead** "Behavioral Dimensions of Temperament" and gives **handout** of same. Briefly review the examples of behavioral characteristics and how they range. Emphasis that behavior is on a continuum. Explain that these descriptions are only one point of view how to classify behavior. There are other theories about temperamental traits. Refer to Training materials section, Background Information, for references about other research information and for other examples (BEHAVIORAL DIMENSIONS OF TEMPERAMENT - - OTHER PERSPECTIVES)

ACTIVITY: Facilitator explains that participants are going to take part in a small group activity.

"In order to better understand these dimensions, we are going to have you out the behavioral dimensions of your choice.

Facilitator divides participants into smaller groups of 3-5 people, depending on number of participants in the workshop.

"Each group will choose one behaviorl dimension (or a combination of dimensions) to role play. Think about the scenario. You may be children and/or adults. The scene can take place at school, in the home, at the stroe, at bedtime, and so on. You must show the full range of that behavior dimension (For example: one child who cannot leave one task to go to another task and the other child who shifts back and forth.) The rest of us will try to guess the behavior dimension, or dimensions, being depicted."

Facilitator Note: This activity may lead to discussion of how participants may alter behavior or change outcome of behavior. Redirect this discussion to next section which discusses supporting child's behavior and "goodness-of-fit".

HANDOUT: Refer back to **handout**: "What We Know About Temperament". Review the points again and ask for questions. Review the paragraphs in the lower half of handout to summarize points of agreement about temperament, and the general description.

MINI-LECTURE SUMMARY: The study of temperament is a controversial undertaking because there there are many theories and no conclusion. However, the points we have discussed seemed to have consensus among many of the researchers and theorists. They do agree on the importance in understanding the child's as well as the adult's personality. Temperament refers to individual differences, and not to universal patterns of development. Temperament focuses on the how of behavior -- what causes the individual differences in the expression of that behavior. Temperament is shaped by heredity and is relatively stable, however, it can be modified by the individual's physical and social environment. Understanding temperament gives us information about the child's or adult's behavior. A child's ability to learn, to manage daily challenges and transitions, is not only due to parenting or his physical/social environment, but is affected by his temperament style that will also influence his behavior.

OBJECTIVE 3

To demonstrate how the child's temperament shapes the relationship between parent and child (or teacher and child).

MINI-LECTURE: Temperament style also shapes the quality of our interactions with others, and influences our judgment, our attitudes, and how we approach people. How others react to us can regulate how we express our temperament style.

EXAMPLE: Consider the infant who is seen as more "irritable". He cries a lot and changes in his routine upset him. A mother may respond to this "squawking" infant in a laughing and playful manner, gently cuddling him and rocking him rhythmically. She frequently has an easier time distracting him and calming him down. However, if she appears worried or agitated, imploring the baby to "be still...calm down" in a forceful voice, and rocking him jarringly, the baby often becomes more agitated and distressed. (You may want to demonstrate these behaviors as you describe the scene.)

Similarly, our own temperament styles influence how others will respond to us.

ACTIVITY: Facilitator asks a participant to help her demonstrate the postures in this activity. Model for the audience the gestures that are described in each situation. Then ask participants for feedback.

"Let's say I am being approached by you. This is how I appear." Model a relaxed pose, arms open and a smile on your face. Then say: "I sit or stand in a relaxed manner, arms open, my face smiling and my eyes focused on your face." Ask: "How do you feel about talking to me?"

Answer should indicate that volunteer feels comfortable interacting with you. Ask audience for additional comments.

Then model with eyes cast downward, arms crossed and a flat affect. Say: "Now when I stand with my arms crossed, my eyes averted or darting all around, my voice muffled, how does that make you feel?"

Answer should demonstrate the volunteer feels awkward, embarrassed, shut out from engaging with you. Ask audience for additional comments.

MINI-LECTURE: How guarded or open we appear towards others will in turn dictate how they will respond to us. Similarly, others can regulate our expression of temperament. The mother who responded to the "squawking" infant in a laughing and playful manner, affects the baby differently than the mother who appears worried, insisting that the baby calm down. However, even if the baby is a more relaxed, easy-going child, he may also be affected by a parents anxious behavior and become more agitated. (You may want to use a doll to demonstrate this while you talk.)

POINT: Temperament is bidirectional - it goes both ways.

ACTIVITY: "We are now going to present a role play that shows the relationship that develops between a parent and child. We want to observe how their temperament styles complement or conflict with each other.
"Facilitator directs "Role Play" that illustrates the relationship between the adult's and child's temperament styles.

Facilitator uses co-facilitator for the role play or you may ask for one volunteer and the facilitator can act the other part. The descriptions of the two roles are given to each player. (Refer to Temperament Training Material section for **Role Descriptions**, pages 172-3.) Ask them to read over their roles silently begin when ready. Remember to include appropriate props (i.e. toys, purse, coat. . . .).

OVERHEAD: Direct participants to **overhead**, **"Look For"**. Tell them they will be asked to comment on the three issues after the role play:

1. temperament style of child and adult.
2. adult's awareness of child's temperament style.
3. "goodness-of-fit" between child and adult.

Facilitator signals role-play to begin. Role-play will take 5-10 minutes.

DISCUSSION: After role-play the facilitator asks participants to respond to each question. "From what you know about the behavioral dimensions of temperament, can you describe the temperament style of the child and the adult in this sketch? Use words that are descriptive of the child's behavior but not labeling or judgmental. You may want to refer to 'Behavioral Dimensions of Temperament' handout."

OVERHEAD: Display **overhead**, "Questions on Temperament Problem" as you ask participants:

> "How understanding was the adult of the child's behavior?"
>
> "How would you describe the 'goodness-of-fit' between the child and the adult."
>
> "How does the child's temperament style influence the nature of this relationship?"

DISCUSSION: Then ask participants:

"How can the adult change his/her behavior to better match the temperament style of the child? Pay attention to what the child needs in order to feel competent and secure. Also you need to be aware of what the adult requires so that she feels competent as well."

> "What happens for child and adult when there is a "goodness-of-fit"?
>
> "What happens if there is a "poor fit"?

MINI-LECTURE: The child brings innate skills and characteristics with him into the world. However, it is up to the adult to interpret these qualities, to recognize the child's strengths and needs and provide an optimal environment in which the child can grow and develop.

Understanding the temperamental bent of child means that temperament can be included as a factor in the progress of the child's overall development. We study temperament to understand how it may influence the child's ability to learn and cope with new tasks and experiences. The adult's responsibility is to become aware of his own temperament style, and of the child's temperament styles to see how they fit together. A child's development is enhanced when the child's behavior is compatible with family's expectations and capabilities. When there is a match between the child and his social environment, he feels secure and compotent, then development is optimal and leads to a sense of high self-esteem and more appropriate maturation. This match is called, "goodness-of-fit". (Term from Chess and Thomas, 1986. Refer to Temperament Training Material section for references, page 179.)

When there is a poor fit between the demands of the child and family expectations, the results could lead to poor self-esteem and maladaptive development. As the child develops, he balances between being stimulated and aroused, and being calm and content so he can learn. An adult who knows a child's temperament style can help the child to regulate between these extremes for optimal growth, learning, and gratification from relationships.

Through our discussions, we have gained more information about temperament. Each person, adult or child, has unique temperament traits and an individual temperamental style. Understanding temperament becomes a tool for matching our temperament styles to others. Therefore, under-standing the child's temperament style provides a way parents and teachers can develop strategies for supporting the child's development. When the child is in an environment where he has realistic expectations to follow, when there is a "goodness-of-fit" between the adults and the child, the child feels secure enough in order to take risks. His self-esteem is enhanced. He will then take the risks and meet the challenges that will enable him to develop to his capacity.

TRAINING MATERIALS

Table of Contents:

HANDOUTS:

Temperament Inventory
What We Know About Temperament
Behavioral Dimensions of Temperament
Descriptors of Role Play: Adult Role
Child Role

OVERHEADS:

Scoring Key
What We Know About Temperament
Behavioral Dimensions of Temperament
Look For
Questions on Temperament Problem
Questions for Temperament Problem

BACKGROUND INFORMATION FOR FACILITATOR:

References for Temperament
Behavioral Dimensions of Temperament -- Other Perspectives
Points of Disagreement

HANDOUTS

TEMPERAMENT INVENTORY

YES / NO		QUESTION
______	1.	Do you make friends easily?
______	2.	Do you feel bored or sleepy when performing monotonous work?
______	3.	Do you easily survive a defeat?
______	4.	Do unexpected changes in your day's schedule irritate you?
______	5.	Are you quick in reacting to unexpected events?
______	6.	Do you feel uncomfortable meeting people you don't know?
______	7.	Are you easily upset?
______	8.	Do you have difficulties in disengaging yourself from a job when engrossed in it?
______	9.	Are you hot-tempered?
______	10.	Do you like to start many projects because you lose interest easily?
______	11.	Are you quick to join in a conversation with fellow travelers?
______	12.	Do you often give up plans because of some difficulty?
______	13.	Can you keep calm when the situation requires it?
______	14.	Does noise disturb you at your work?
______	15.	Do you attach importance to regular mealtimes?
______	16.	If someone interrupts your work, does it take you a while to fix your attention again?
______	17.	Are you quick in overcoming obstacles?
______	18.	Do you tolerate easily changes in your daily routine?
______	19.	Do you like to stay in a place full of hustle and bustle?

______ 20. When you start a project, do you like to stick with it until you are finished?

______ 21. Can you calmly eat lunch after a heated exchange with someone?

______ 22. Can you manage to pay attention to more than one topic of conversation at a time?

______ 23. Is it hard for you to concentrate on a book again when someone interrupts you?

______ 24. Do you prefer to have your permanent seat at work, at the table, etc.?

______ 25. Are you able to sit or stand quietly for a long time, when asked to do so?

______ 26. Do you move quickly during activities?

______ 27. Do you like work that involves talking to many people?

______ 28. Do you keep to a fairly regular schedule of mealtimes, bedtimes, work time, etc.?

CATEGORY	YES / NO	
1. Adaptability	3, 4, 13, 17	___
2. Persistence/Attention	8, 10, 12, 16, 20	___
3. Distractibility	14, 22, 23	___
4. Regularity	15, 18, 24, 28	___
5. Activity	2, 19, 25, 26	___
6. Approach/Withdrawal	1, 6, 11, 27	___
7. Intensity	5, 7, 9, 21	___

Adapted from **TEMPERAMENT, PERSONALITY, ACTIVITY.** Jan Strelau. 1983.

WHAT WE KNOW ABOUT TEMPERAMENT

What theorists agree upon about temperament

1) temperament reflects dimensions of behavior, not behavioral acts

2) some temperament traits have a biological basis

3) temperament characteristics appear in infancy and are more directly expressed at this stage

4) temperament refers to individual differences, not universal patterns of development

5) temperament is relatively stable over time, but expression of temperament characteristics can be influenced by environment, parenting styles, peers, body state, maturation, experience....

General Description of Temperament

Temperament consists of relatively stable, basic dispositions that are genetic in origin. These regulate the expression of activity, reactivity, emotionality and sociability. Many temperament traits are present at birth (i.e. how active a child is, how sensitive he is to touch or noise) and others are not recognized until later in development (i.e. how a child reacts to new situations, how persistent a child is). As the child develops, the expression of temperament becomes modified by experience, and the child's physical and social environment.

Temperament focuses on the how of behavior -- what causes the individual differences in the expression of that behavior.

Temperament relates to the way a child interacts with the environment -- how the child maintains a state that allows for exploration of the environment, and adaptation to the events and experiences that are encountered daily.

Project Ta-kós, 1990

BEHAVIORAL DIMENSIONS OF TEMPERAMENT

The following is one example of how theorists describe behavioral dimensions of temperament:

Adapted from Thomas, A. and Chess, S. Temperament and Development (1977).

ACTIVITY LEVEL: degree of child's activity, when awake or sleeping.

	very active	less active
Example:	wriggles & squirms	remains where placed

REGULARITY OR RHYTHMICITY OF BODILY FUNCTIONS: how predictable child is in terms of daily routine.

	difficult to schedule	easy to schedule
Example:	uncertain nap time and sleep schedule	takes routine naps at same time each day

RESPONSE TO NEW SITUATIONS: how child responds to new acitivites, people and environments.

	approach	avoidance/withdrawal
Example:	accepts new foods easily	rejects new foods immediately

ADAPTABILITY TO CHANGE IN ROUTINE: how long it takes the child to adjust to new situations or schedules.

	difficulty with changes	ease with changes
Example:	takes several meetings for child to adjust to new babysitter	accepts new babysitter without problems

LEVEL OF SENSORY THRESHOLD: how sensitive the child is to environment.

	low amount of stimulation needed to produce a response	high amount of stimulation
Example:	light sleeper, easily aroused	deep sleeper, usually undisturbed by routine noises

PREDOMINANT QUALITY OF MOOD: the mood that is most descriptive of the child.

	more pleasant behavior	more unpleasant behavior
Example:	awakens from sleep smiling and secure	awakens from sleep crying and more irritable

INTENSITY OF MOOD EXPRESSION: amount of energy child uses in responding to what he experiences.

	mild reaction	intense reaction
Example:	explores toys more cautiously, looking them over in calm manner	bangs on toys and vocalizes loudly

DISTRACTIBILITY: how easily child is diverted from activity.

	not distractible	easily distractible
Example:	returns to a forbidden toy again and again	able to be diverted from forbidden toy to another activity

PERSISTENCE/ATTENTION SPAN: how child can persist in attaining a goal and stay with one activity for a period of time.

	persistent	not persistent
Example:	looks puzzle over and over again until he figures it out	gives up on doing puzzle after a few tries

ROLE PLAY

ROLE 1: ADULT

You have to take your mother to her doctor's appointment. After that, you have promised you mother you would take her to visit her sister in the hospital who is scheduled for surgery at 7:00 a.m. tomorrow. The hospital has very strict visiting policies. Because the sister is scheduled for surgery, visitations must end by 5:30 p.m. You told your three year old daughter this morning that you would be taking her to stay with Aunt Hattie this afternoon. You are almost ready to leave. It will take you ten minutes to get your daughter to your sisters; five minutes to get to your mom's; and twenty minutes to get to the doctor.

You are a person that believes your word is your bond. If you tell someone you will be somewhere at a certain time, you like to be there five minutes early.

Now your task is to close up the house and get your daughter, who is in her room, in the car. YOu know your daughter is easily distracted, and likes to daydream.

Good Luck!

ROLE PLAY

ROLE 2: CHILD

You are a three year old only child who likes to "read" picture books, and gets deeply involved in whatever calls your attention. You can stay playing for hours. You are usually low-key and have your own slower paced sense of time. However, you respond to verbal reprimands, and can easily get your feelings hurt.

You have been excited about visiting your aunt and cousins. You are in your room trying to figure out which toys to take with you. You pick up a photo album to remind you of your cousins, and try on different sweaters trying to recall their favorite colors. You pick up toys and test them out trying to remember which games your cousins enjoyed playing with the most, etc.

Have Fun!

OVERHEADS

SCORING KEY

CATEGORY	QUESTION	YES / NO
ADAPTABILITY	3, 4, 13, 17	________
PERSISTENCE/ ATTENTION	8, 10, 12, 16, 20	________
DISTRACTIBILITY	14, 22, 23	________
REGULARITY	15, 18, 24, 28	________
ACTIVITY	2, 19, 25, 26	________
APPROACH/ WITHDRAWAL	1, 6, 11, 27	________
INTENSITY	5, 7, 9, 21	________

Project Ta-kós, 1990

WHAT WE KNOW ABOUT TEMPERAMENT

* reflects dimensions of behavior

* biological basis - innate

* appears in infancy - most pure expression

* refers to individual differences of behavior

* relatively stable over time

Project Ta-kós, 1990

BEHAVIOR DIMENSIONS OF TEMPERAMENT

ACTIVITY LEVEL

very active<------------------> less active

REGULARITY/RHYTHMICITY OF BODILY FUNCTIONS

difficult to schedule<-------->easy to schedule

RESPONSE TO NEW SITUATIONS

approach<---------------------> avoidance/withdrawl

ADAPTABILITY TO CHANGE IN ROUTINE

difficulty with change<------->ease with change

LEVEL OF SENSORY THRESHOLD

low amount of<-------------->high amount
stimulation needed   stimulation needed

PREDOMINANT QUALITY OF MOOD

more pleasant behavior<-->more unpleasant
behavior

INTENSITY OF MOOD EXPRESSION
mild reaction<------------------>intense reaction

DISTRACTIBILITY
not distractable <-----------> easily distractible

PERSISTENCE/ATTENTION SPAN
persistent<--------------------> not persistent

LOOK FOR:

- temperament style of child and adult
- adult's awareness of child's temperament style
- "goodness-of-fit" between child and adult

Project Ta-kós, 1990

QUESTIONS ON TEMPERAMENT PROBLEM

1) How understanding was the adult of the child's behavior?

2) How would you describe the 'goodness-of-fit' between the child and the adult.

3) How does the child's temperament style influence the nature of this relationship?

Project Ta-kós, 1990

QUESTIONS FOR TEMPERAMENT PROBLEM

1) From your understanding of temperament, what is the child's temperament style.

2) How does this affect you as a teacher/parent?

3) What is your style and how does your style fit in this situation?

4) What ways can the adult change to better fit the child's temperament style?

Project Ta-kós, 1990

BACKGROUND

INFORMATION

FOR

FACILITATOR

REFERENCES FOR TEMPERAMENT

Goldsmith, H.H., Buss, A.H., Plomin, R., Rothbart, M.K., Thomas, A., Chess, S., Hinde, R.A., & McCall, R.B. (1987), Roundtable: What is temperament? Four Approaches. Child Development. 58. 505-529.

Kohnstamm, G.A., (Ed.). (1987). Temperament discussed: Temperament and development in infancy and childhood. Swets and Zertlinger.

Strelay, Jan (1983). Temperament, personality, activity, Academic Press, New York.

Temperamental differences in infants and young children. (1982). CIBA Foundation Symposium. Lendon Pitman Books. Books, London. Pp. 176 - 190.

Thomas, A. and Chess, S. (1977). Temperament and development. Brunner/Mazel, New York.

INTEGRATION OF SYSTEMS WORKSHOP

What You Need:

HANDOUTS:

Treatment Planning Guide and Explanation of Descriptive Terms
Beliefs of Extended Matrix Model
Womb Environment
Mother Environment
Kid Power Environment
Brain Power Environment
Extended Matrix Model

OVERHEADS:

Flight, Fight, Fright Responses
Range of Arousal
Treatment Planning Guide and Explanation of Descriptive Terms
Aspects of Sensory Input
Repetition vs. Novelty
Calming and Alerting Activities
Beliefs of Extended Matrix Model
Safe Means...
Feeling Safe Leads to...
Matrix Progression
    * Womb Environment
    * Mother Environment
    * Kid Power Environment
    * Brain Power Environment
Extended Matrix Model
Objectives of Extended Matrix Model
Questions for Integration Problem

EQUIPMENT & MATERIALS:

Overhead Projector
Screen
Slides or Pictures depicting examples of WOMB, MOTHER, KID POWER and BRAIN POWER environments (4-5 slides on each environment)
Slide Projector

INTEGRATION OF SYSTEMS

MINI-LECTURE INTRODUCTION: In this last workshop, we will bring together the systems discussed in the previous sessions. We will look at how these systems come together to help the child receive information from her environment or from people with whom she interacts. We will also see how these systems help the brain to process this information so that the child can formulate and give appropriate responses.

OVERHEAD AND HANDOUT: Integration of Systems

The sensorimotor system provides the foundation for all other development. The child's brain receives input from the environment through her senses. The brain organizes this information so that it is meaningful to the child. Because it is meaningful, she can learn adaptive responses that enable her to grow and learn. When she is processing the information accurately, and responding appropriately, she feels confident in meeting the challenges of further development.

The communication system provides the tools for the child to obtain her physical wants and needs, and to gain and share information. Through word labeling she is able to organize and understand her world, which is a critical component for cognitive development. When she is able to communicate her ideas and feelings, and know that she is understood, her psycho-social well-being is enhanced.

Finally, temperament reminds us that each child is unique. Her innate abilities and individual temperament style influence how she approaches and manages the developmental process. When caregivers understand the child's temperament style, as well as their own, they are better able to provide a more supportive environment that promotes learning, and the development of the child's self-esteem.

In each of the systems, we have stressed the dynamic nature of their development. From the beginning, sensory integration and communication work together at helping the child relate to and interact with her world. In turn, the child's temperament style and biological makeup influence how that world can support and stimulate her growth and maturation.

EXAMPLE: Consider the parent who is trying to enhance his child's language development. He is aware of how an adult's animated gestures and enthusiasm play important roles in stimulating the child's attention to language. However, his child tends to be more shy and passive. He finds that his clowning and exaggerated movements are overwhelming his child.

DISCUSSION: Ask participants: "What are possible outcomes of this interaction?"

Answers may include: 1) The parent may feel something is wrong with the child and blame her. 2) He may think that something is wrong with himself and he is incapable of teaching his child. Therefore he should withdraw from future attempts.

In this example, when the father is checking out the child's language readiness, he must also take into account the temperament styles of both he and his daughter. The challenges for this parent are to find another approach, to help the parent and child "fit" together and to encourage the child's interest in talking.

Ask participants: "What if the child is outgoing and excitable?"

Participants may answer: the father will probably be more easily encouraged by his child's response to his efforts.

This will give the father a lot of satisfaction, and prompt him to continue the stimulation of language in his child. This child's behavior produces satisfaction, regardless of the parents' understanding of the child's temperament, because there is already a goodness-of-fit.

MINI-LECTURE: Each of the systems will shape the relationship between the child and her caregivers. In addition to understanding the normal progression of the child's development, it is the caregiver's responsibility to be sensitive to the child's individual behavior and capabilities. When the caregiver's responses are attuned to the child's behavior and supportive of her abilities, then her development will be enhanced.

In this session, we want to demonstrate the integration of the child's temperament style with communication and sensorimotor development. We will focus on the caregiver's relationship with the child as it affects the child's overall development. We will first explore the significance of stimulation and self-regulation on the child's behavior. The ability to take in information, and tune out distractions, is fundamental to learning skills across all the systems. Then, we will look at a model that demonstrates how different kinds of environments affect the child's growth and development. Finally, we will explore strategies, through problem-solving activities, that use what we have learned for creating environments that are supportive of the child's development. We will work together to find ways we can support the child's development by providing a secure and safe environment that enables the child to develop her full capabilities.

AROUSAL & SELF REGULATION

OBJECTIVE 1

Demonstrate how the brain and sensory system regulate sensory input.

OVERHEAD: Review **Sensory Feedback and Sensory Integration.**

MINI-LECTURE: Let's review some aspects about sensorimotor integration. remember, in **Sensory Feedback** the brain organizes sensory input from environment so information makes sense to child. This way the child can give an adaptive response that is appropriate to situation/interaction.

The brain cannot process all this information at once so it **regulates** how much and what kinds of input it receives -- brain screens/filters incoming information (show on diagram).

We learned that the integration and coordination of the sensory systems to development of sensorimotor skills that enable the child to grow and develop - - **Sensory Integration.**

In order for child to learn, she must take in information in a meaningful way. Sensorimotor skills help the child organize sensory input. This is accomplished by **self-regulation** from the **protective** and **discriminative** functions of the sensorimotor system. We discussed this briefly when we talked about touch.

OVERHEAD: **Protective and Discriminative Functions**

MINI-LECTURE: The **protective** and **discriminative** functions of the sensorimotor system **regulate** sensory input. They balance each other. When one is activated, then the other function is inhibited. This is a "fluid" process. Let's look at these further.

OVERHEAD: **Protective Function**

MINI-LECTURE: When the child finds himself in any situation that clearly threatens him, or he perceives is a threat, then the **protective** function is activated. In this state, the body strives to respond quickly to the "danger" and alleviate the situation. (What we all do.)

DISCUSSION: Ask: What are some of the physical symptoms that you experience when you are anxious, or threatened?

Answer: increased blood pressure and heart rate, rapid/shallow breathing, perspiration, tense muscles, etc.

The changes in the body keep the child alert so he can respond. This overarousal leads the child (all of us) certain kinds of responses which help him resolve or remove himself from the threatening conditions.

OVERHEAD: **Flight, Fight, Fright**

MINI-LECTURE: Types of responses:
Flight -- want to get away from threat
Fight -- want to confront or "get rid" of threat
Fright -- scream or cry for assistance

The protective function then helps us regulate any threats or danger to the child's (ours, also) well-being. These include situations that threaten us socially or emotionally.

ACTIVITY: Here are a couple of scenarios. Which response is activated and what is the threat?

1) The preschooler who shoves her friend when he accidentally trips her.
   fight response -- physical threat, embarrassment
2) The child who suddenly finds a million things to do besides his homework.
   flight response -- self-esteem is threatened, procrastination helps him avoid what is uncomfortable for him

Ask: "Can you give me some examples of scenarios for the "fright" response (for you or child)?"

Answers: monsters, insects

MINI-LECTURE: Now let's look at the **Discriminative Function.**

OVERHEAD: Discriminative Function

MINI-LECTURE: When the discriminative function of the system is stimulated, the body is aroused in a different way. The higher level of arousal helps the child (us) to concentrate on tasks, and to focus our attention on the present situations. **The ability to focus and attend is the gateway to learning.**

DISCUSSION: Ask: What happens to learning, if the child feels threatened or stressed in some way?

Answer: Refer to balance and adjustment between **Protective** and **Discriminative** functions.

Example: You have all had experiences with children who seem eager and alert in the morning. What happens after lunchtime? (How about you?). Kids restless, more inattentive, squirmy. As children tire, brain sends messages to slow down because it can't process as much information. **Children's behavior reflects the feedback their brains are sending to their bodies.**

MINI-LECTURE: The brain regulates the amount and kinds of sensory input that the body takes in. The brain processes this so the right response can be made. The brain balances between protective and discriminative functions.

The brain also regulates learning and the child's development in another way. It inhibits the action of certain behaviors so the child can learn other skills. This can be reflexes (previous discussion) or established skills. (ATNR reflex so can roll).

DISCUSSION: Ask: What skills tend to decrease or change when the child is learning to walk?

Answer: Language, regressive behavior.

ACTIVITY: Let's see if we can observe how the brain inhibits some of our behaviors during this next activity. This activity addresses the ability to focus and filter.

Get into two small groups. This is a variation of "Telephone". I will whisper a phrase into one person's ear, very softly. That person will whisper the phrase into her neighbor's ear and so on. During this activity I want each of you to observe the body language and facial expressions of the sender and receiver of the message. Each of you will get a turn to be a participant and observer.

When you finish the game, discuss in your group what kinds of behavior you saw and we will share with the whole group.

Ask: "What did you notice about face, eyes, shoulders, arms of the senders and receivers of the message?"

Answer: We often close our eyes to shut out visual sensory input so we can concentrate on what we're hearing. We hunch over to brace body, etc. One example of how brain balances processing of sensory input with capabilities of human body.

MINI-LECTURE: A critical part of the child's development is her ability to regulate the amount and kinds of information that comes her way. So as the child develops, she **becomes aware of when and what kind of stimulation** she needs for learning to take place.

Children naturally find ways to balance between times of great stimulation (**high arousal**) and times of calm (**low arousal**).

OVERHEAD: **Range of Arousal**

MINI-LECTURE: The child is most alert and best able to attend/learn when at **optimum arousal** (between overload and understimulation) -- **best time** for **work** and **play**.

Child's Goal -- to stay in optimum arousal as long as possible. The child's ability to develop to her full capacity means learning to balance between extremes and exercise **self-control**. This reduces frustration so learning can take place.

DISCUSSION: Ask: "What examples can you give of being in high arousal?...of low arousal?...of optimum arousal? What do you do to stay awake or to calm yourself?"

Ask: "Do you all respond to the same stimulation or situation in the same way?
Why not?" (individual differences, temperament)

MINI-LECTURE: So optimum arousal will be different for everyone. An activity that is fun, arousing and challenging for one child, will over or underwhelm another.

DISCUSSION: Ask: "Can you think of an example of this with the children you know?" (tickling)

Children and adults adapt **self-regulatory skills** to keep in balance, to reduce frustration and feel alert/centered.

ACTIVITY: Have the participants think of the ways they regulate themselves when they are anxious or bored. Have them make a list of 5-6 techniques or behaviors. Ask each one to share 2 with the group, trying not to duplicate answers.

Put these on chart to use later.

Then ask participants to look around the room and see if they can find 3-4 ways others regulate themselves. At each table pool the ideas and have the small group decide on two to share with the large group. Add these to chart.

DISCUSSION: Ask: "What examples do you have how children regulate themselves to reduce frustration and stay centered?" (22 mo. child removes self from task, goes to corner of room or under table, until ready to reengage)

Add these to list.

Guide participants in discussion. You may want to use this example to get them started. Or you may use it at the end of discussion as another example of the child's ability to find ways for self-regulation. For the infant, they may suggest sucking, clasping hands together, rocking, kicking. As the child matures, answers may include a variety of movements that can both stimulate and clam them. They run, slide, swing, suck, rock, or eat. They use language to regulate themselves.

("No, don't touch! Mommy says 'don't touch'.") When frustrated or anxious, they tend to engage in activity that require lower levels of skill that they normally use, such as a four-year-old who sucks on a baby doll bottle or plays toddler-aged games.

OBJECTIVE 2

To develop an understanding of what kinds of sensory input are needed to create a balance between low and high arousal.

MINI-LECTURE: As we explore how adults and children find ways to manage the kind of stimulation they receive, we learn that self-regulation is basic to the process of development. As the needs and types of stimulation change throughout the day, the brain processes the input which enables the child to adjust his behavior to changes in his world.

Patti Oetter, MA OTR/L, and occupational therapist, develop a model for training other occupational therapists in recognizing the kinds of sensory input the brain receives. It guides therapists in designing appropriate treatment plans for clients who need to learn better ways to manage this input.

For our purpose, the model gives us a picture of the range of sensory input adults and children receive from their environment. It also helps us understand why we all need different kinds of stimulation in order to function at our optimum level.

Facilitator Note: This model was developed by an occupational therapist in order to help her peer formulate treatment plans. We are not using this model in this way, and that is not our intent. The model is to be used for helping the participants become aware of the range and variety of sensory input that is necessary for the child's growth and development. The diagram will guide participants in understanding the purpose of the child's behavior in reaction to sensory input and what he needs to regulate his actions. It can suggest strategies for intervention in programs and classrooms for enhancement of the child's development.

OVERHEAD AND HANDOUT: Display **overhead** of **"Treatment Planning Guide"** and give **handout** of same. Review some of the descriptions with participants.

Facilitator Note: Some of the terms used in the diagram may be unfamiliar to participants. Descriptions of some of the input follows:

Joint and muscle activity in the tactile column refers "heavy work" of the body such as pushing, pulling and pounding.
Joint and muscle activity under vestibular movement refers to the body in motion such as swinging an arm or tapping the foot
Deep pressure refers to activities such as deep massage or chewing gum
Touch pressure refers to tapping fingers on the arm or running fingers through the hair
Light touch refers to tickling, air moving across the skill or an insect landing on an arm
Oscillation means "up and down"
Vestibular gravity refers to the placement of the body in space
Form refers to shape

DISCUSSION: "Let's look over this diagram. Begin at the upper left-hand corner. This end of the diagram illustrates actions that are **most calming** and help the child **feel organized**. The combination of certain tastes and the action of sucking provide a calming action. Consider the infant, and how important sucking is to her not only nutritionally but also helping her feel safe, secure and calm."

"As you move across the model, the input becomes more stimulating (**most alerting**). At the same time, because there is more information to process, receiving this kind of input makes demands of the child and produces more stress (**most stressful**). As you move down the page, again input is more alerting. The upper left end of the model demonstrates the range of input that is **most calming** and **most organizing**. The mouth region is a very important part of the child's ability to organize and concentrate.

Ask participants: "Can you name some actions or movements that you do with your mouth that help you to calm down?" Answers may include smoking, drinking, chewing gum, sucking on candy, chewing on nails, etc.

MINI-LECTURE: In this same way, children wiggle their tongues or suck their thumbs when doing difficult tasks, because these movements help them organize. The lower right hand area illustrates movements and activities that are most stimulating. Language is the input which is most creative and energizing, but requires the most effort and higher level of skills. Therefore, it produces more anxiety for the child.

This "Planning Guide" is a tool for understanding the meaning of the child's responses, as well as what he requires from his environment to maintain his equilibrium. this information aids parents, teachers and others in finding ways they can support the child in his endeavors. They can provide the means for him to self-regulate the input he receives. When he feels in control, he can concentrate and he feels good about himself.

Facilitator Note: You may want to refer to the Sensory Integration handout from the first workshop to review what tasks the child is striving to learn. Self-esteem grows out of the child feeling in charge, and confident of his abilities.

OVERHEAD: Display **overheads "Aspects of Sensory Input"** and then, **"Repetition vs. Novelty"**, as you give lecture review with participants.

MINI-LECTURE: There are some other factors to consider when using this model. The impact of sensory input on the child is influenced by the intensity, frequency, duration, and rhythm of the movement. As you look over the diagram, you recognize that intense, rhythmic and repetitive movement is the most soothing. Therefore massage or chewing helps the child feel more 'centered' and calm. Conversely, erratic, arrhythmic input produces a novelty to the child, holding his attention and keeping his interest. Think of loud unexpected noises that cause you to jump and get your attention. Reflect back to the Communication session and think about how you engage the child in communicating. Your pitch changes, you come in close and exaggerate your gestures in order to get the child's attention. You drop into a playful mode that you do not normally use with adults.

ACTIVITY: Facilitator asks for a volunteer to help demonstrate this next activity. Facilitator tells volunteer that she will touch him/her in two different ways. First take his/her hand or arm. Lightly tickle the palm or lower part of the arm beneath the wrist.

Ask volunteer: "Describe how this kind of touch makes you feel?"

Then knead the palm, arm or, if you think volunteer may feel comfortable, massage his/her neck, for 30-6- seconds. Ask him/her to describe how this feels in comparison to the tickling.

Now direct the participants to look over the diagram.

Ask them: "Find where tickling and massage are placed on the grid. Describe how massage would affect you or a child compared to tickling using the descriptors form this Planning Guide model."

Answers should include that tickling is the more stressful and alerting kind of touch, while massage is lower on the scale and more organizing. Get feedback from them about experiences they have had with their responses to different sensory input.

OVERHEAD: Display **overhead "Calming and Alerting Activities."**

DISCUSSION: "Let's review what input helps to organize and calm the child, and what activities are novel and alerting."

Review activities with participants. Solicit other examples of "calming/alerting activities" from them.

MINI-LECTURE: We will be referring to the information shown on the Planning Guide model in the next section of this session. This model is a tool to understand the relationship between the kinds of input the child receives, and what he uses to regulate that input. This balance then enables him to more accurately respond to his world, and to concentrate so he can learn the skill s he needs to grow and develop.

We must also consider that each child brings unique qualities, an individual temperament style, to the world in which he lives. This, too, influences how he accommodates the information he gets, and how he "fits" within his family and his environment. A child who is active and highly distractible will react to sensory input in a different manner than one who has low energy and low arousal. The first child may respond instantly to stimulation while the second child requires more input.

During the rest of this workshop, we will continue to explore how to integrate the child's abilities with his needs, the demands from his environment, and what role adults play in facilitating that relationship.

Facilitator Note: We are focussing on "typical" child development during these workshops. However, children with special needs react to stimulation in ways that vary from normal child development. They may have fewer skills available to them for self-regulation. Questions may arise about exceptions to what has been discussed. Remind participants that our emphasis is on what to expect from typical development. For more information, you may direct them to consult with occupational and physical therapists familiar with sensory integration.

OBJECTIVE 3

To demonstrate the **EXTENDED MATRIX** model.

MINI-LECTURE: The **EXTENDED MATRIX** is a model that shows what kinds of environments enhance the child's sense of well-being, giving him the confidence to take risks and learn new skills. It demonstrates how the child's environment can be modified to meet his individual needs. This model gives parents and teachers opportunities for providing practical support to the child for his overall growth and development.

The model was developed by occupational therapists Patti Oetter MA OTR/L, and Eileen Richter MPH OTR, as a way to provide rehabilitative therapy using a sensory integrative approach. It is based on the "Matrix Progression" from Joseph Chilton Pearce's book **THE MAGICAL CHILD** 1977.

OVERHEAD AND HANDOUTS Facilitator shows **overhead "Beliefs of Extended Matrix Model"** and gives **handout** of same. This is to be used during following discussion. Only refer to first section (no. 1) during this next lecture.

MINI-LECTURE: We start with the first section. This model stems from the belief that a child learns best when:

1) he is in a **safe place**
that allows him to **take risks**
and **explore** environmental possibilities

THE CHILD MUST KNOW HE IS SAFE:

physically -- safe from physical injury,
safe from postural constraints (he has freedom to move).

emotionally -- safe from fear of failure, having emotional security, feeling worthwhile

intellectually - -feeling competent, feeling challenged.

It is important that we understand what it means to be **safe** in the context of this model. As illustrated, a child can feel threatened in many ways (i.e. physically, emotionally, intellectually). When he is afraid for his well-being, he becomes fearful and feels uncertain. I this state, he will be unwilling to "try" new skills, to take risks, because he is afraid of the consequences. Without the exploration and experimentation of his world, he will have fewer opportunities to develop all his capabilities.

OVERHEAD: Display **overhead "Safe Means"** and review with participants.

MINI-LECTURE: However, when a child does feel safe, he is feeling more secure. Being safe means the child believes the "certainty" for "disaster" (the child's perception) has been "reduced" to a "possibility". Within this possibility comes the "challenge" for the child to venture out into his world.

The child who feels safe has the confidence and courage to explore his environment. With this assurance he is willing to take more risks. This wider base of experience gives the child more opportunity to practice skills and learn new ones, leading to a more secure and competent child.

Now we refer back to the other sections of the Extended Matrix Model. Each point builds on the foundation that the child believes he is safe and secure.

2) When the child feels confident he can **release his energy** in order to explore; he can **respond to inner drives** in order to **challenge himself;** he can **develop competency** within his environment.

OVERHEADS: Display **"Feeling Safe Leads to"** and review. Then resume showing overhead **"Beliefs of Extended Matrix Model".**

MINI-LECTURE:

3) When he is living in a safe environment he is able to:
    - **organize**
    - **meet challenges**
    - **master tasks**
    - **interact with others**
    - **feel competent**
    - **take risks**

4) Finally, the **adult** (parent, teacher, therapist, etc.) is the primary support for helping the child feel safe and competent in order to meet the challenges of growing and developing. The adult **becomes a source of possibilities, develops tasks** within a safe environment, and **provides just the right challenge** for the child to achieve success.

Pearce theorized that the child thrives in four distinct "environments" which promote these beliefs. He conceptualized these environments in a "matrix progression" on four levels. All the child's interactions and developmental tasks would take place within these levels.

Let's now look at these four levels and the Extended Matrix model by Oetter and Richter.

OVERHEAD: Display **overhead "Matrix Progression"** and review each level.

MINI-LECTURE: The levels are:

the womb
mother
kid power
brain power

> **POINT**: There are four levels to the **matrix progression** -- womb, mother, kid power, and brain power.

Each level represents a particular environment in which the child learns. Each environment is also more likely to encourage and support specific kinds of tasks. Let's take a look at the environments. As each level is described, slides (or pictures) will be shown that illustrate that environment. You will receive handouts on these environments.

Facilitator Note: The slides or pictures of each of these environments needs to be provided by the facilitator or agency. Please read each description carefully so you can accurately depict the four environments. When reviewing the environments, you may have personal examples of these that you want to use to illustrate the discussion.

HANDOUTS: Facilitator gives handouts of each of the environments.

OVERHEAD AND (PICTURES): Facilitator shows **overhead** of **"Womb Environment"** and **SLIDES** review. Show **slides** (or pictures) during lecture.

MINI-LECTURE: The matrix progression begins with the **WOMB** which means:

- small, protected, closed-in-spaces
- minimal movement
- continuous physical contact
- subdued sensory input from auditory and visual systems
- emphasis on tactile and proprioceptive input combined with gentle rhythmic motion (i.e. rocking, stroking)

DISCUSSION: Ask participants: "As you look at examples of these environments, can you recall places you have been in that you now realize were a womb environment?"

Answers may include: a loft, "under the pillows", "under the covers", a tent, being swaddled, playing in big boxes, hiding in a closet, in a big tire, etc.

The second matrix is the **MOTHER** environment. Ask participants: "What do you think you would find in the mother environment?"

Guide participants in discussion. Answers may include: "a place to be nurtured", a place with few people or with an adult. This environment includes any space in which child is one-on-one with an adult. May be combined with womb or brain power environment.

OVERHEAD AND SLIDES (PICTURES): Show **overhead "Mother Environment"** and review. Show slides (or pictures) during lecture.

MINI-LECTURE: The mother environment means:

- a more limited space with 8-10 inches between the adult and the child
- intermittent physical contact, sensory input of deep touching (massage, cuddling) with light touching (stroking), and possibly rhythmic movements (rocking)
- simple language with soft, rhythmic vocal quality
- non-verbal communication
- activities directed by adult

This environment is a place where the child is nurtured and where the child feels safe. It may also be an environment for the child to regroup and re-energize. Look over the slides (or pictures) and think about the characteristics of the mother environment.

DISCUSSION: Ask: "What do you think a kid power environment would be like?"

OVERHEAD AND SLIDES (PICTURES): Show **overhead "Kid Power Environment"** and then show **slides** (or pictures) after lecture.

MINI-LECTURE: The third level of the matrix is **KID POWER**. This is the place:

- where the child feels mastery of himself, of gravity, of his world (jungle gym equipment, swings, soccer, fantasy play)
- of challenges and exploration that lead to physical and personal competency, where the child has a sense of accomplishment
- of action and movement -- being outdoors, climbing, hanging, swinging, running, etc.
- where the child receives input from all the senses -- emphasis is on proprioception (heavy work such as lifting, pushing, pulling, etc.), vestibular movement (gravity and balance), motor planning (bicycles, skateboards, jungle gym)
- of more cognitive interaction with the environment
- of increased auditory and visual input
- of more internal language and verbal planning -- "Here I go!" or "I'm gonna jump"
- where activities are "kid-directed"

DISCUSSION: Ask: "What else is happening in a kid power environment?"

Answer: Creative role definition, development of imagination

MINI-LECTURE: As you notice in the slides, this is a place of great activity and exploration. The child engages in sports and practices language and motor skills. He is creative and interactive. This is a time of high energy and risk taking.

DISCUSSION: Ask: "What are some other kid power environments?"

OVERHEAD AND SLIDES (PICTURES): Show **overhead "Brain Power Environment"** and then show **slides** (or pictures) after the lecture.

MINI-LECTURE: We finally come to the last level of the matrix. This is the **BRAIN POWER** environment which means:

- a "thinking" environment -- academic skills, abstract reasoning and problem-solving, concentration on cognitive skills and interactions
- more complex social interactions
- decreased sensory input -- minimal tactile and proprioceptive input
- limited movement
- more visual and auditory processing
- increased dependence on language
- at risk for sensory deprivation
- typical of classroom environment (children in desks, at tables)

This environment is the one we are most familiar with because it is representative of most school classrooms. We end with this environment because, while it is the most common, it may not be the best one for learning to take place. In this environment the child is in danger of **sensory deprivation**.

OVERHEAD: (Return to **"Treatment Planning Guide"** to use as guide in discussion).

DISCUSSION: "Think about what you have learned on sensorimotor development, communication, temperament and arousal and self-regulation. What do you think are some of the drawbacks of this environment? What aspects of this environment may prohibit the child from taking risks and wanting to learn? What may happen to decrease sensory input in this environment?"

Guide participants in discussion. Answers may include: limited physical movement causes the child to become bored or irritated; classwork becomes repetitive and child loses interest (needs alerting, novel activities).

"Academic learning and language are the most difficult and stressful tasks, and the child often does not get a chance to engage in activities to reduce stress. He may give up because he is overwhelmed and may not be allowed to "do the things" that help him feel organized and competent."

MINI-LECTURE: The Extended Matrix Model is a way to challenge us to think about the world in which we and the children live, and how that world can be more supportive and nurturing for our continued development. Each of the environments encourages different tasks and interactions.

DISCUSSION: Ask: "What does womb and mother environment encourage?"

Answers include: The womb and mother environments encourages a time for calm and rest for regrouping before tackling a difficult task. The mother environment promotes tasks that can benefit from comforting and individual attention such as reading books, doing a puzzle with the adult, or having a quiet tea party.

Ask: "What does kid power environment encourage?"

In contrast, the kid power environment emphasizes the physical aspects of development. It provides the child with a chance for movement, exploration, setting up physical challenges, and mastery over gravity and his body. These are tasks that are critical, not only for gross and fine motor development, but also for the accomplishment of more complex cognitive and psycho-social skills.

As we discussed, the brain power environment involves higher skills of learning such as academic and abstract thinking, and reasoning. To prevent sensory deprivation and the child losing interest, brain power tasks may be accomplished in other settings. As suggested, the child can do a puzzle in mother or womb environment where she can feel more secure. The kid power environment affords an excellent setting for language development.

OVERHEAD AND HANDOUT: Show **overhead** of diagram **"Extended Matrix Model"** and give **handout** of same. Review the information on the overhead.

MINI-LECTURE: This diagram summarizes the characteristics of each of the environments, and the tasks, and kinds of interactions. As we have discussed, certain developmental tasks may be mastered more easily in an alternative environment. This setting may provide the child with more support which increases his sense of confidence and his self-esteem, enabling him to take on more challenges.

OVERHEAD: Show **overhead** of above **"Objectives of Extended Matrix Model"** as you lecture.

MINI-LECTURE SUMMARY: The Extended Matrix model provides the framework in which we can create an environment that supports the integration of all the developmental systems and enhances the child's well-being. The model gives a way to show:

1) how these systems support each and enhance the child's ability to interact with, adapt to and gain control over his world

2) how the child's development is nourished in a setting in which he feels safe, inviting him to explore while challenging him to learn

3) how adults can recognize what the child needs in order to thrive, and how they can modify the child's environment in order to meet those needs

We will be referring back to this model in our next section, putting together all we have learned from previous sessions.

INTEGRATION ACTIVITIES

OBJECTIVE 4

To demonstrate how adults can modify the child's environment to support the integration of the child's developmental systems.

MINI-LECTURE: During these activities, we will refer to the Extended Matrix Model as we integrate all we have discussed in these sessions. We use this information so we can learn to modify our environment to make it more responsive to the child's needs.

When we discussed temperament, we learned that a child's temperament style and the adult's temperament style may shape the way we manage our relationships and our environment. A child who is more active and more attentive will approach a new task differently than a child who is more cautious and distractive. Because of his particular temperament style, the child may also seek certain environments in order to help him feel more congruent, and secure. We have also demonstrated that different temperament styles react to arousal and self-regulation in different ways.

We will be practicing the integration of all the elements we have talked about through participation in small and large group activities.

ACTIVITY: Facilitator explains that this first activity poses two situations. one from the adult's perspective and one from the child's perspective, that demonstrate the relationship of temperament to environment. These situations create implications for the individual's ability to maintain self-regulation. Suggest that participants may want to refer to the environments that have been discussed, as well as information from any of the other lectures.

FACILITATOR: Describe each problem. Ask participants to think about the question asked, then choose 1-2 participants to share their responses with others.

PROBLEM NO. 1

"Think of a child with whom you are very familiar (your own or one with whom you are working). Recall his temperament style and behavioral level of activity. In your daily routine, you have a designated time for him to 'read' his books."

Ask participants:

> "Given a choice, in what kind of environment would this child carry out this task?"
>
> "What aspects of this environment would appeal to the child for making this choice? Use Treatment Planning Guide and other handouts as you need them."

EXAMPLE OF A RESPONSE:

"Christopher would choose the womb environment. He is cautious, slow to warm up to the other children, and does not like alot of stimulation. In the womb environment, he would read the book because he would feel...

- protected and supported
- little movement
- little visual or auditory distractions
- enough in control to look at a book."

Facilitator looks for theme of congruency between temperament style and the optimal environment that allows the child or the adult to carry out tasks with an enhanced sense of accomplishment.

PROBLEM NO. 2

"You want to write a letter of complaint to a major appliance manufacturer. Your appliance, which is new, has stopped working after three weeks. The local dealer refuses to fix it or trade for it."

Ask participants:

> "In what kind of environment would you work in order to write this letter?"
>
> "What properties made you choose this environment?"

EXAMPLE OF A RESPONSE:

"I would have to work in a brain power environment because I would need...

- to think without being interrupted
- limited movement, until I finish
- minimal tactile and proprioceptive input
- to think about what words I was going to use in my letter to convey my frustration and anger
- to sit at the kitchen table."

MINI-LECTURE: Communication development depends on a variety of environments for maximum stimulation and support, and for acquisition of language skills. This next activity focuses on opportunities created by an environment that invites children to use their language to communicate their thoughts and ideas.

ACTIVITY: Facilitator asks participants to respond to two situations that address language development in children. The focus is on what environments would offer a secure place in which the child can be encouraged to talk and take risks. For this activity, divide participants into small groups. Have each group choose someone to record ideas. After each problem, guide participants in discussion. List ideas on board or flip chart. Ask participants to think back to video sequence in the Communication session with the infant and his mother (Dr. Tronick). Also refer them to use the Extended Matrix Model.

PROBLEM NO. 1

Ask participants:

"In what kind of environment would a toddler, who is just beginning to develop expressive language, thrive?"

"What would that environment look like?"

"What would the adult be doing in this environment?"

"What other factors may contribute to the toddler's acquisition of language?"

EXAMPLES OF RESPONSES:

- mother or kid power environment
- sitting close to child, exaggerating voice and gestures; adult directs language
- lots of descriptive language
- fantasy play with peers/sibs - other modeling for child, more indirect (hard work, vestibular activities)
- movement can stimulate language

PROBLEM NO. 2

Ask participants:

"In what environment would a young child with some language thrive?"

"What would this environment look like?"

EXAMPLES OF RESPONSES:

- kid power environment
- toys, stimulation, novel and familiar items and a people
- environment that is kid-directed
- adults help by providing lots of labeling but let child lead; adults support by modeling descriptive language
- siblings and peers imitate language activities

MINI-LECTURE: These exercises help us begin to integrate what we have learned about the child's development. We see that the child's innate abilities for skill-building and self-regulation are influenced by the opportunities she has for stimulation. We also recognize that parents, teachers and all caregivers are instrumental in offering secure, supportive, and challenging environments in which the child can develop to her full potential.

We have on final activity to help you begin to "put this all together".

ACTIVITY: Facilitator divides participants into two groups. Ask them to choose one example to work on in each group. You will ask them some questions as a way to assess the child and then they will brainstorm ideas for helping.

"Think of a child (your own or one with whom you are working) with whom you are having some difficulty. your problem may be associated with behavioral concerns or helping a child to learn a task."

OVERHEAD: Show **overhead, "Questions for Integration Problem"** and review with participants.

1) Describe the child's general behavior, temperament style, review with participants.
2) In what kind of environment does he seem to spend the most time? What environment seems to best support his development?
3) To what kinds of interactions does he respond best?
4) How does your temperament style "fit" with the child's?
5) How would you describe the problem? What occurs? where does it occur? How do you respond?

DISCUSSION: "Given this information, I want you to work together in developing an alternative way of managing the problem so that both the child's and your self-esteem are enhanced."

"Think about what kind of environment would be most supportive for changing the difficult behavior. How can the child feel in control and encouraged? How do you want to interact with the child? How do you talk to the child? What can you do to facilitate his ability to regulate himself, to prevent distress and discouragement?"

Allow 20-30 minutes for this activity. When groups are ready, have spokesperson in each group share solutions.

MINI-LECTURE SUMMARY: The more parents and teachers know about their children and what they need, the more they understand the children's behavior. The more you know about a child's behavior the more competent you become in finding ways to support the child's development. This creates the "goodness-of-fit" that matches the child's expectations to be cared for with your realistic expectations of what the child needs to thrive.

TRAINING MATERIALS

Table of Contents:

HANDOUTS:

Treatment Planning Guide and Explanation of Descriptive Terms
Beliefs of Extended Matrix Model
Womb Environment
Mother Environment
Kid Power Environment
Brain Power Environment
Extended Matrix Model

OVERHEADS:

Flight, Fight, Fright Responses
Range of Arousal
Treatment Planning Guide and Explanation of Descriptive Terms
Aspects of Sensory Input
Aspects of Sensory Input
Repetition vs. Novelty
Calming and Alerting Activities
Beliefs of Extended Matrix Model
Safe Means...
Feeling Safe Leads to...
Matrix Progression
- Womb Environment
- Mother Environment
- Kid Power Environment
- Brain Power Environment

Extended Matrix Model
Objectives of Extended Matrix Model
Questions for Integration Problem

This workshop is designed to provide you with basic information and tools to help children with whom you work and live. You provide the experiences and nurturing they need to acquire the confidence and skills which will help them master, and finally, enjoy their world.

We have spent several sessions exploring child development from an alternative point of view. We have learned that the child's development is dynamic. While we know development proceeds in a linear manner, the individual systems interact with each other in special ways. They support and stimulate the child's acquisition of skills in each one. Each child brings innate abilities to the developmental process that will influence how easily she learns. At the same time her environment will offer advantages and drawbacks that will affect how well she masters new skills.

The overall theme, though, is the importance of the relationship of the child with her parents, caregivers, and teachers. Parents and caregivers are primary in creating a setting in which the child feels safe so she can be confident and competent in order to explore her world, and take the risks necessary for learning skills.

HANDOUTS

TREATMENT PLANNING GUIDE

Taste/ Smell	Oral Texture	Tactile	Vestibular Movement	Vestibular Gravity	Visual	Auditory
Sweet/ Vanilla	Suck/ Blow	Joint & muscle activity - Cool to neutral warmth	Joint & muscle activity	Vertical	Light/ Dark Color	Vibration
Salt/ Brine	Bite/ Crunch	Deep pressure- Moderate temperatures	Oscillation (bouncing)	Horizontal	Form (boundaries)	Rythm Music Sing-song speech Rhyme
Sour/ Citrus Spice	Chew	Touch pressure- Moderate temperatures	Linear movement (swinging)	Out or straight planes (diagonals)	Place (location)	Vocalization/ speech sounds
Bitter/ Smoke	Lick	Light touch (may be unexpected) Extreme termperatures	Rotary movement (spinning or partial rotation)	Upside down/ backwards space	Movement through time and space	Language

RHYTHMIC INPUT OVER TIME - *DE*CREASES AROUSAL LEVEL
***A*RYTHMIC INPUT OVER TIME - *IN*CREASES AROUSAL LEVEL**

Rhythm of Input +
Intensity of Input +
Frequency of Input +
Duration of Input =
TREATMENT

Patti Oetter MA, OTR/L, FAOTA
Copyright 1988

EXPLANATION OF DESCRIPTIVE TERMS FOR TREATMENT PLANNING GUIDE

VESTIBULAR MOVEMENT: movement of the body through space

VESTIBULAR GRAVITY: placement of the body in space

JOINT/MUSCLE ACTIVITY: 1) Tactile -- "heavy work" such as pounding, pulling, pushing; 2) Vestibular -- the body in motion such as swinging arms, toe-tapping

DEEP PRESSURE: massage, gum chewing

TOUCH PRESSURE: tapping of fingers, running of fingers through hair, pulling on earlobes

LIGHT TOUCH: tickling, air moving across skin, insect alighting on arm

OSCILLATION: moving up and down such as bouncing or jumping

LINEAR MOVEMENT: moving side to side, or back and forth, such as swinging

ROTARY MOVEMENT: moving in a circular direction such as spinning

FORM: shape of objects, boundaries and structures of objects in space

PLACE: location of objects in space

BELIEFS OF EXTENDED MATRIX MODEL

1) he is in a **safe place**
that allows hit to **take risks**
and **explore** environmental possibilities

THE CHILD MUST KNOW HE IS SAFE

physically -- free from physical injury,
free from postural constraints

emotionally -- free from fear of failure,
having emotional security
feeling worthwhile

intellectually -- feeling competent,
feeling challenged

2) he can **release his energy** in order to explore;
he can **respond to inner drives** in order to
challenge himself;
he can **develop competency** within his
environment

3) he is in an environment that helps him to:

organize
meet challenges
master tasks
interacct with others
feel competent
take risks

4) the **adult** (parent, teacher, therapist, etc.)
becomes a source of possibilities,
develops tasks within a safe environment,
and **provides just the right challenge** for the
child to achieve success

Material from Environment for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD > Adapted by Project Ta-koe with permission from P. Oetter and E. Richter.

WOMB ENVIRONMENT

- Small, protected, closed in space

- Resistance to movement

  EXAMPLES: pushing, stretching

- Continuous physical contact

- Decreased auditory/visual input
  Increased touch, muscle and joint input

- Emphasis on tactile and proprioceptive input with possible gentle rhythmic motion

  EXAMPLES: rocking, stroking, etc.

Material from Environment Implications for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD. Adapted by Project Ta-kos with permission from P. Oetter and E. Richter.

MOTHER ENVIRONMENT

- Limited space, with 8"-10" between adult and child
- Intermittent physical contact
- Sensory input:
    - deep touch
    - light touch
    - rhythmic movements
        - (rocking, cuddling, stroking)
- Simple language
    - more nonverbal
    - soft vocal quality
    - rhythmic vocal quaility
- Oral-motor stimulation (feeding)

  EXAMPLES: feeding, sound play
- A nurturing retreat for safety or re-energizing
- Non-verbal communication
- Activities supported and encouraged by adult

Material from Environment Implications for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD. Adapted by Project Ta-kós with permission from P. Oetter and E. Richter.

KID POWER ENVIRONMENT

- A place where child feels mastery of self, gravity, and environment
- A place that invites exploration and provides challenges which lead to physical and personal competence -- a sense of accomplishment
- A place with possibility for action
- Provide sensory input to all senses -- focus on proprioception, vestibular movement, and motor planning
- Internal language and verbal planning
- Increased movement and joint/muscle input
- Increased auditory and visual input
- Some cognitive interaction with environment
- Activities are kid-directed

Material from Environment Implications for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD. Adapted by Project Ta-kos with permission from P. Oetter and E. Richter.

BRAIN POWER ENVIRONMENT

- A "thinking environment" – academic skills, abstract reasoning, and problem solving, cognitive skills and interaction
- More complex social interactions
- Decreased sensory stimulation – minimal tactile and proprioceptive input
- Limited movement
- More visual and auditory processing
- Increased dependence on language
- At risk for sensory deprivation
- Typical of school classroom environment
- Adult often directs activities

Materials from Environment Implications for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD. Adapted by Project Ta-kós with permission from P. Oetter and E. Richter.

EXTENDED MATRIX MODEL

	WOMB	MOTHER	KID POWER	BRAIN POWER
TASK	Relaxation Rest Reflection Self Awareness	Any task that gets or gives nurturing: eating/nursing; hugging; comforting Can be from or to an object (stuffed toy, pet), another child or adult	Motor activities Sports Tasks that challenge gravity (climbing, jumping, catching, sliding, etc) Risk taking	Academics Listening, learning Demonstrating knowledge Complex social activities, i.e. play, games, sharing Praxis
ENVIRONMENT	Whole body physical contact Resistence to movement Containment without restraint Low light & sounds Minimal motion Flexion	Within 8-10 inch space Simple language- often rhythmic Intermittent tactile- full body or body parts; varies from touch to deep pressure Retreat for safety- reenergizing	Mastery over earth and gravity Gradation/control of body Lots of movement Gravitational challenge Dependence on visual and auditory input Language-more internal	Problem Solving Cognitive interaction Complex social interaction Language dependent-int/ext, auditory & visual Minimal tactile/proprioceptive input Movement limited
INTERACTION by therapist or child	[illegible] minimal language [illegible]	[illegible]	[illegible]	[illegible]

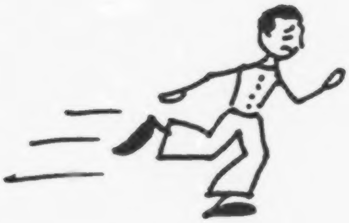
Richter/Oetter, 1989

BEST COPY AVAILABLE

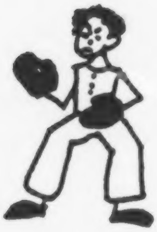
OVERHEADS

FLIGHT, FIGHT, FRIGHT RESPONSES

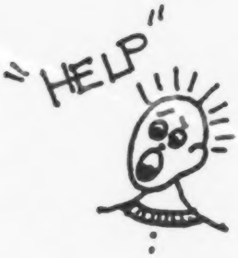
FLIGHT



FIGHT

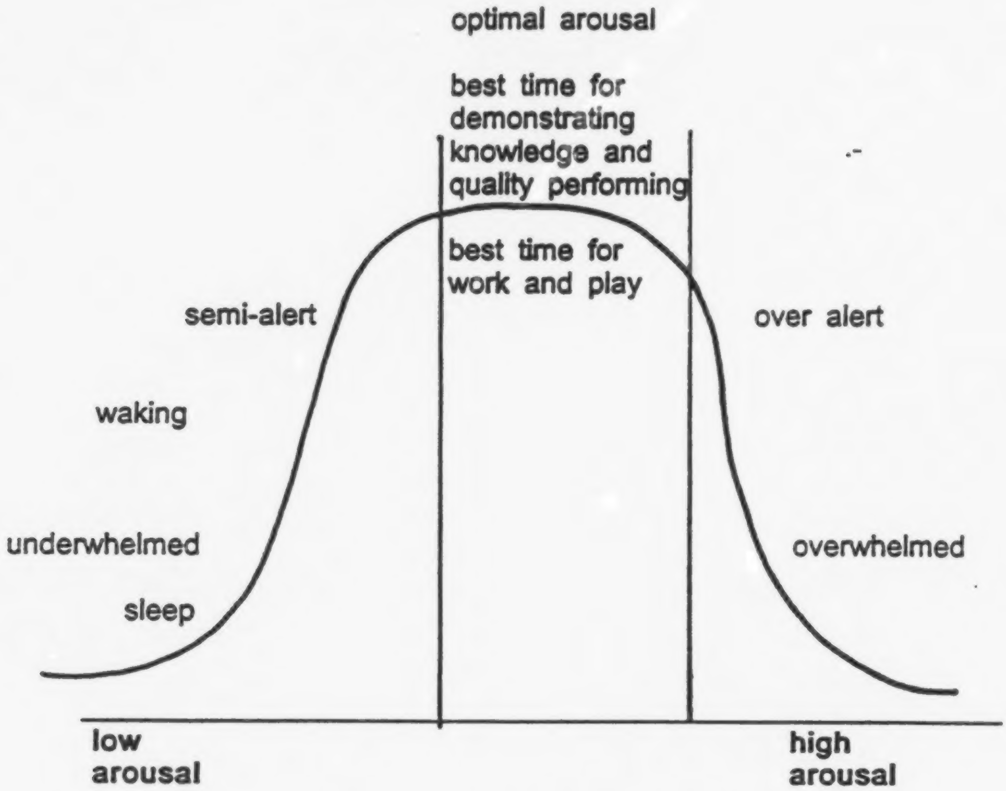


FRIGHT



Project Ta-kós, 1990

RANGE OF AROUSAL


optimal arousal
best time for demonstrating knowledge and quality performing
best time for work and play
semi-alert
waking
underwhelmed
sleep
over alert
overwhelmed
low arousal
high arousal

GOAL: To balance between low and high levels of arousal in order to stay in optimal arousal as long as one can.

- In optimum arousal, one is most alert. It is the best level for **learning** and attending.

- **No one stays in optimum arousal all day** It is necessary to be in low or high arousal sometimes (i.e. to get to sleep, to get a term paper finished, etc.)

- Flight/fright/fight may occur at either end of the spectrum, when you **don't** want to be there.

Adapted by Project Ta-kós with permission from Patricia Oetter, MA, OTR/L. c 1988.

TREATMENT PLANNING GUIDE

Taste/ Smell	Oral Texture	Tactile	Vestibular Movement	Vestibular Gravity	Visual	Auditory
Sweet/ Vanilla	Suck/ Blow	Joint & muscle activity - Cool to neutral warmth	Joint & muscle activity	Vertical	Light/ Dark Color	Vibration
Salt/ Brine	Bite/ Crunch	Deep pressure-Moderate temperatures	Oscillation (bouncing)	Horizontal	Form (boundaries)	Rythm Music Sing-song speech Rhyme
Sour/ Citrus Spice	Chew	Touch pressure-Moderate temperatures	Linear movement (swinging)	Out or straight planes (diagonals)	Place (location)	Vocalization/ speech sounds
Bitter/ Smoke	Lick	Light touch (may be unexpected) Extreme termperatures	Rotary movement (spinning or partial rotation)	Upside down/ backwards space	Movement through time and space	Language

RHYTHMIC INPUT OVER TIME - *DE*CREASES AROUSAL LEVEL
***A*RYTHMIC INPUT OVER TIME - *IN*CREASES AROUSAL LEVEL**

Rhythm of Input +
Intensity of Input +
Frequency of Input +
Duration of Input =
TREATMENT

Patti Oetter MA, OTR/L, FAOTA
Copyright 1988

EXPLANATION OF DESCRIPTIVE TERMS FOR TREATMENT PLANNING GUIDE

VESTIBULAR MOVEMENT: movement of the body through space

VESTIBULAR GRAVITY: placement of the body in space

JOINT/MUSCLE ACTIVITY: 1) Tactile -- "heavy work" such as pounding, pulling, pushing; 2) Vestibular -- the body in motion such as swinging arms, toe-tapping

DEEP PRESSURE: massage, gum chewing

TOUCH PRESSURE: tapping of fingers, running of fingers through hair, pulling on earlobes

LIGHT TOUCH: tickling, air moving across skin, insect alighting on arm

OSCILLATION: moving up and down such as bouncing or jumping

LINEAR MOVEMENT: moving side to side, or back and forth, such as swinging

ROTARY MOVEMENT: moving in a circular direction such as spinning

FORM: shape of objects, boundaries and structures of objects in space

PLACE: location of objects in space

ASPECTS OF SENSORY INPUT

RHYTHM: patterns of movement or activity

INTENSITY: amount of forcefulness or energy of movement, activity or state

FREQUENCY: number of times movement or activity occurs

DURATION: amount of time movement or activity lasts

REPETITION VS. NOVELTY

Rhythmic input over time brings about REPETITION which **decreases** arousal level.

Arrhythmic input over time introduces NOVELTY and **increases** arousal level.

Project Ta-kós 1990

CALMING - ALERTING ACTIVITIES

CALMING	**ALERTING**
Pressure Touch - (Massage, games such as "sandwich", hugging)	Light Touch (Tickling, tapping)
Neutral Warmth (The body's heat retained)	Cold - Chilling
Slow rhythmic movement	Fast, irregular movement (like playing tag)
Rocking, swinging	Spinning
Chewing, sucking, licking	
Vibratory stimulus (large amplitude, low frequency - like riding in a car)	High frequency vibration
Decreased physical activity	Increased physical activity

Lorna Jean King, 1986

BELIEFS OF EXTENDED MATRIX MODEL

1) he is in a **safe place**
that allows hit to **take risks**
and **explore** environmental possibilities

THE CHILD MUST KNOW HE IS SAFE

physically – free from physical injury,
free from postural constraints

emotionally – free from fear of failure,
having emotional security
feeling worthwhile

intellectually -- feeling competent,
feeling challenged

2) he can **release his energy** in order to explore;
he can **respond to inner drives** in order to
challenge himself;
he can **develop competency** within his
environment

3) he is in an environment that helps him to:

organize
meet challenges
master tasks
interacct with others
feel competent
take risks

4) the **adult** (parent, teacher, therapist, etc.)
becomes a source of possibilities,
develops tasks within a safe environment,
and **provides just the right challenge** for the
child to achieve success

Material from Environment for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD> Adapted by Project Ta-koe with permission from P. Oetter and E. Richter.

SAFE MEANS ...

Safe means ...

the certainty or probability of disaster has been decreased to only a possibility.

P. Oetter, 1990

FEELING SAFE LEADS TO....

Feeling safe leads to......

a sense of **comfort** and
safety which develops
a sense of **confidence**
that leads to more **risk-taking**
that develops a
sense of **competence**
in the child

P. Oeller, 1990

MATRIX PROGRESSION

the womb

mother

kid power

brain power

Material from Environment Implications for Occupational Therapy Practice: A Survey Integrative Perspective (1990). AOTA, Rockville MD. Adapted by Project Ta-kós with permission from P. Oetter and E. Richter.

WOMB ENVIRONMENT

- Small, protected, closed in space

- Resistance to movement

  EXAMPLES: pushing, stretching

- Continuous physical contact

- Decreased auditory/visual input
  Increased touch, muscle and joint input

- Emphasis on tactile and proprioceptive input with possible gentle rhythmic motion

  EXAMPLES: rocking, stroking, etc.

Material from Environment Implications for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD. Adapted by Project Ta-kós with permission from P. Oetter and E. Richter.

MOTHER ENVIRONMENT

- Limited space, with 8"-10" between adult and child
- Intermittent physical contact
- Sensory input:
  - deep touch
  - light touch
  - rhythmic movements
    - (rocking, cuddling, stroking)
- Simple language
  - more nonverbal
  - soft vocal quality
  - rhythmic vocal quaility
- Oral-motor stimulation (feeding)

  EXAMPLES: feeding, sound play
- A nurturing retreat for safety or re-energizing
- Non-verbal communication
- Activities supported and encouraged by adult

Material from Environment Implications for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD. Adapted by Project Ta-kos with permission from P. Oetter and E. Richter.

KID POWER ENVIRONMENT

- A place where child feels mastery of self, gravity, and environment
- A place that invites exploration and provides challenges which lead to physical and personal competence -- a sense of accomplishment
- A place with possibility for action
- Provide sensory input to all senses -- focus on proprioception, vestibular movement, and motor planning
- Internal language and verbal planning
- Increased movement and joint/muscle input
- Increased auditory and visual input
- Some cognitive interaction with environment
- Activities are kid-directed

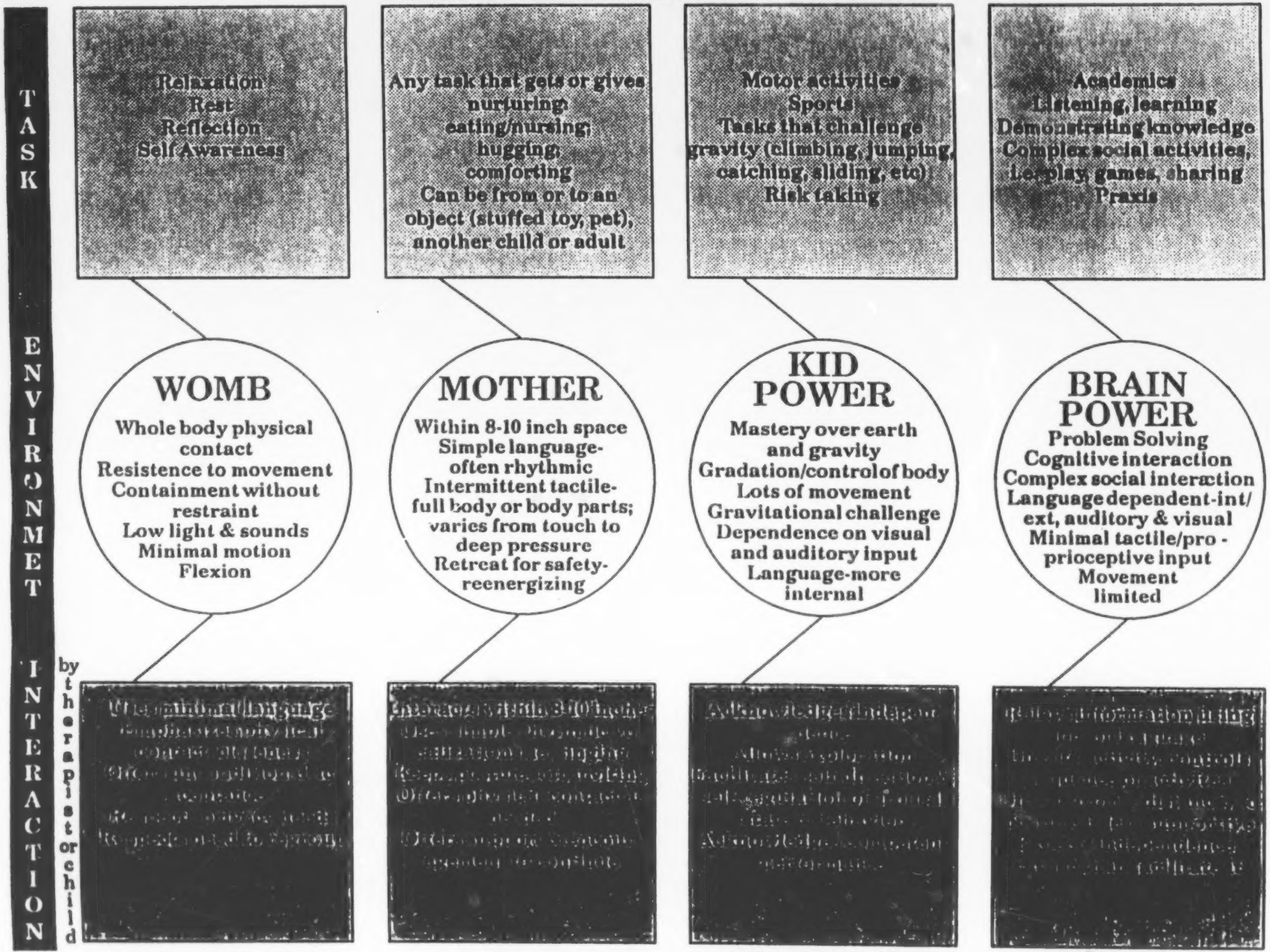
Material from Environment Implications for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD. Adapted by Project Ta-kos with permission from P. Oetter and E. Richter.

BRAIN POWER ENVIRONMENT

- A "thinking environment" – academic skills, abstract reasoning, and problem solving, cognitive skills and interaction
- More complex social interactions
- Decreased sensory stimulation – minimal tactile and proprioceptive input
- Limited movement
- More visual and auditory processing
- Increased dependence on language
- At risk for sensory deprivation
- Typical of school classroom environment
- Adult often directs activities

Materials from Environment Implications for Occupational Therapy Practice: A Sensory Integrative Perspective (1990). AOTA, Rockville, MD. Adapted by Project Ta-kós with permission from P. Oetter and E. Richter.

EXTENDED MATRIX MODEL



TASK

Relaxation
Rest
Reflection
Self Awareness

Any task that gets or gives nurturing:
eating/nursing;
hugging;
comforting
Can be from or to an object (stuffed toy, pet), another child or adult

Motor activities
Sports
Tasks that challenge gravity (climbing, jumping, catching, sliding, etc)
Risk taking

Academics
Listening, learning
Demonstrating knowledge
Complex social activities, i.e. play, games, sharing
Praxis

ENVIRONMENT

WOMB

Whole body physical contact
Resistence to movement
Containment without restraint
Low light & sounds
Minimal motion
Flexion

MOTHER

Within 8-10 inch space
Simple language-often rhythmic
Intermittent tactile-full body or body parts; varies from touch to deep pressure
Retreat for safety-reenergizing

KID POWER

Mastery over earth and gravity
Gradation/control of body
Lots of movement
Gravitational challenge
Dependence on visual and auditory input
Language-more internal

BRAIN POWER

Problem Solving
Cognitive interaction
Complex social interaction
Language dependent-int/ext, auditory & visual
Minimal tactile/proprioceptive input
Movement limited

INTERACTION by therapist or child

Uses minimal language
[illegible]

Interacts within 8-10 inches
[illegible]

Acknowledge independence
[illegible]

Gives information using
[illegible]

Richter/Oetter, 1989

BEST COPY AVAILABLE

OBJECTIVES OF EXTENDED MATRIX MODEL

1) how these systems support each and enhance the child's ability to interact with, adapt to and gain control over his world

2) how the child's development is nourished in a setting in which he feels safe, inviting him to explore while challenging him to learn

3) how adults can recognize what the child needs in order to thrive, and how they can modify the child's environment in order to meet those needs

QUESTIONS FOR INTEGRATION PROBLEM

1) Describe the child's general behavior, temperament style, language skill level, and sensorimotor skill level.

2) In what kind of environment does he seem to spend the most time? What environment seems to best support his development?

3) What kinds of interactions does he respond to best?

4) How does your temperament style "fit" with the child's?

5) How would you describe the problem? What occurs? Where does it occur? How do you respond?

Project Ta-kós, 1990